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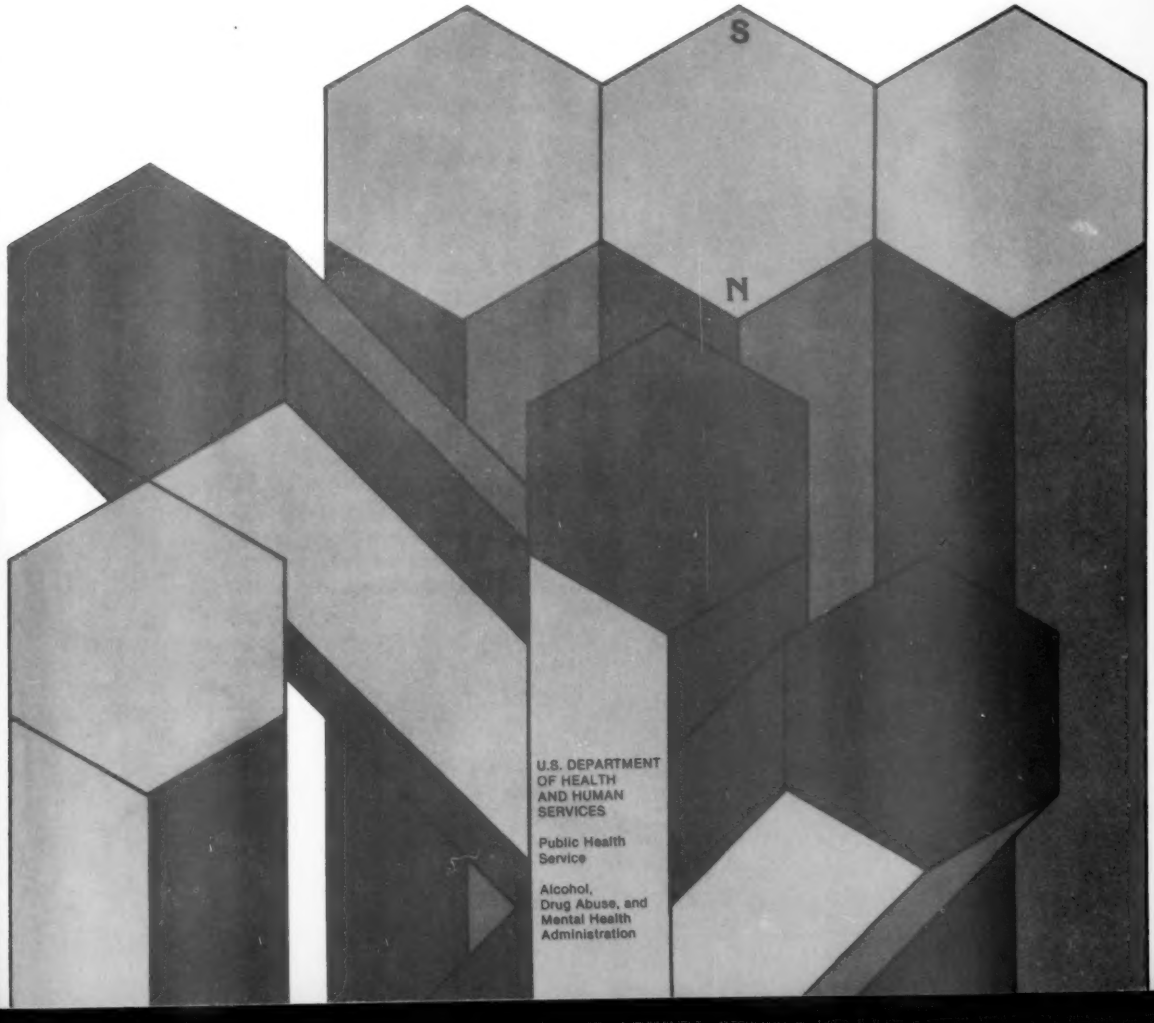

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Carrie Lee Rothgeb, *Editor*
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ABSTRACTS

PRECLINICAL PSYCHOPHARMACOLOGY

01 CHEMICAL SYNTHESIS, ISOLATION AND CHARACTERIZATION

002633 Allan, R. D.; Curtis, D. R.; Headley, P. M.; Johnston, G. A. R.; Lodge, D.; Twitchin, B. Dept. of Pharmacology, Australian National University, P.O. Box 334, Canberra City, A.C.T 2601, Australia **The synthesis and activity of cis- and trans-2-(aminomethyl) cyclopropanecarboxylic acid as conformationally restricted analogues of GABA.** Journal of Neurochemistry. 34(3):652-656, 1980.

Two GABA analogues, cis-trans-2(aminomethyl)-cyclopropanecarboxylic acid (CAMP) and trans-2-(aminomethyl)-cyclopropanecarboxylic acid (TAMP), were synthesized and tested for biological activity. When administered microiontophoretically, TAMP was more potent than GABA as a bicuculline sensitive depressant of the firing of cat spinal neurons in vivo, but CAMP was less potent than GABA and not sensitive to bicuculline. TAMP was a weak inhibitor of sodium dependent uptake of GABA rat cerebral cortex and was a substrate for GABA:2-oxoglutarate aminotransferase activity in extracts of rat brin mitochondria. CAMP did not influence GABA uptake or aminotransferase activity, and neither isomer reduced glutamate decarboxylase activity in rat brain homgenates. Both cyclopropane isomers inhibited the sodium independent binding of GABA to synaptic membranes from rat brain. Results indicate that extended rather than folded conformations of GABA are active at most GABA recognition sites within the mammalian CNS. 21 references. (Author abstract modified)

002634 Armstrong, D. M.; Pickel, V. M.; Joh, T. H.; Reis, D. J.; Miller, R. J. Dept. of Neurology, Laboratory of Neurobiology, Cornell University Medical College, New York, NY 10021 **Immunocytochemical localization of catecholamine synthesizing enzymes and neuropeptides in area postrema and medial nucleus tractus solitarius of rat brain.** Journal of Comparative Neurology. 196(3):505-517, 1981.

The catecholaminergic and peptidergic neurons in the area postrema and adjacent portion of the medial nucleus tractus solitarii (mNTS) were characterized by the immunocytochemical localization of the catecholamine synthesizing enxyme tyrosine hydroxylase (TH), dopamine beta-hydroxylase (DBH) and phenylethanolamine-N-methyltransferase (PNMT) and two neuropeptides, substance-P and (Leu5)-enkephalin. The catecholamine synthesizing enzymes TH and DBH, found jointly only in noradrenergic and adrenergic neurons, were localized in cells having a similar morphology and topographical distribution. These cells were located throughout the rostrocaudal and dorsoventral extent of the area postrema as well as in neurons within the mNTS. Based on data concerning biosynthetic enzyme markers and neuropeptide localization, it is suggested that neurons within the area postrema contain noradrenalin and enkephalin and that the afferent axons contain substance-P, adrenalin, and probably noradrenalin. 30 references. (Author abstract modified)

002635 Barden, N.; Dupont, A.; Labrie, F.; Merand, Y.; Rouleau, D.; Vaudry, H.; Boissier, J. R. MRC Group in Molecular Endocrinology, Centre Hospitalier, Universite Laval, Quebec G1V AG2, Canada **Age-dependent changes in the beta-endorphin content of discrete rat brain nuclei.** Brain Research. 208(1):209-212, 1981.

Concentrations of beta-endorphin were measured by radioimmunoassay in discrete brain nuclei of young (3 months) and old (24 months) rats. The beta-endorphin content of all major structures known to contain this peptide, with the exception of the eminence, is reduced (at a level which is approximately 50% of control values) in the old rats. The highest concentration of beta-endorphin was found in the arcuate nucleus, the hypothesized exclusive location of cell bodies of the brain beta-endorphinergic system. Since opiate peptides injected intracerebrally stimulated prolactin secretion, it is difficult to reconcile the decrease in brain beta-endorphin levels with the increased plasma prolactin levels of old rats. 25 references. (Author abstract modified)

002636 Barker, Steven A.; Harrison, Robert E. W.; Monti, John A.; Brown, George B.; Christian, Samuel T. Neurosciences Program, Dept. of Psychiatry, University of Alabama, Birmingham, AL 35294 **Identification and quantification of 1,2,3,4-tetrahydro-beta-carboline, 2-methyl-1,2,3,4-tetrahydro-beta-carboline, and 6-methoxy-1,2,3,4-tetrahydro-beta-carboline as in vivo constituents of rat brain and adrenal gland.** Biochemical Pharmacology. 30(1):9-17, 1981.

The identification and quantification of three 1,2,3,4-tetrahydro-beta-carbolines as normal constituents of rat brain and adrenal gland, using combined gas chromatographic/mass spectrometric techniques, are reported. Qualitative analyses of these tissues led to the identification of 1,2,3,4-tetrahydro-beta-carboline (THBC), 2-methyl-THBC (2-MTHBC), and 6-methoxy-THBC (6-MeOTHBC), as determined by observed peak retention times, mass fragments, and ion mass ratios. Quantitative analyses using deuterated internal standards, gave the following results: THBC (ng/g wet wt) in brain = 17.5, adrenal = 500.3. 6-MeOTHBC (ng/g wet wt) in brain = 35.6, adrenal = 1113.7. Mechanisms for the formation of these beta-carbolines as well as their possible function in vivo are discussed. 43 references. (Author abstract)

002637 Becker, Kenneth L.; Silva, Omega L.; Post, Robert M.; Ballenger, James C.; Carman, John S.; Snider, Richard H.; Moore, Charles F. Section of Endocrinology, V. A. Medical Center, Washington, DC **Immunoreactive calcitonin in cerebrospinal fluid of man.** Brain Research. 194(2):598-602, 1980.

Immunoreactive calcitonin (iCT) was detected in the cerebrospinal fluid (CSF) of 27 normal human Ss. Determinations made using an antibody with midportion recognition indicated a mean iCT content of 28pg/ml in the CSF and 89pg/ml in the serum of Ss, with a CSF/serum distribution ratio of 0.31. There were no significant correlations between CSF iCT or serum iCT and the calcium, magnesium, phosphate, sodium, potassium, or chloride contents of the CSF or serum. 33 references. (Author abstract modified

002638 Glazer, E. J.; Basbaum, A. I. Dept. of Anatomy, University of California, San Francisco, CA 94143 **Immunohistochemical localization of leucine-enkephalin in the spinal cord of the cat: enkephalin-containing marginal neurons and pain modulation.** Journal of Comparative Neurology. 196(3):377-389, 1981.

The spinal cord distribution of the endogenous opioid peptide leucine-enkephalin in the cat was examined using immunohistochemical techniques. The distribution of nerve processes was studied in untreated cats; colchicine was administered to study the distribution and morphology of spinal enkephalin containing perikarya. Enkephalin immunoreactive processes were greatest in laminae I and II (marginal layer and substantia gelatinosa) of the superficial dorsal horn. In many sections, the outer substantia gelatinosa (SG), lamina IIA, was discernibly less immunoreactive than were laminae I or IIb. Despite previous reports in the rat emphasizing the enkephalin somata of the SG, in the cat the majority of superficial dorsal

horn enkephalin somata were found in the marginal layer. It is suggested that many spinal enkephalin neurons, generally thought to be local circuit neurons, project rostrally, to other spinal levels and perhaps to the brainstem and/or thalamus. 76 references. (Author abstract modified)

002639 Johnson, Robert Paul; Sar, Madhabananda; Stumpf, Walter E. Sar: Dept. of Anatomy, Div. of Health Affairs, University of North Carolina, Chapel Hill, NC 27514 **A topographic localization of enkephalin on the dopamine neurons of the rat substantia nigra and ventral tegmental area demonstrated by combined histofluorescence-immunocytochemistry.** Brain Research. 194(2):566-571, 1980.

A combined histofluorescence/immunocytochemistry technique was used to study the anatomical relationships of enkephalin and dopamine terminals and to examine the fibers in close relation to the dopamine neurons of the substantia nigra and ventral tegmental area. In general, enkephalin was localized near dorsal dopamine cells that project to cortical areas, whereas ventral dopamine cells projecting to striatal structures received less enkephalin innervation. 23 references.

002640 Kelly, Paul A. T.; McCulloch, James. McCulloch: Wellcome Surgical Institute, University of Glasgow, Glasgow, G61 1QH, Scotland **Heterogeneous depression of glucose utilization in the caudate nucleus by GABA agonists.** Brain Research. 209(2):458-463, 1981.

Local cerebral glucose utilization in the rat caudate nucleus has been examined following the intravenous administration of the GABA agonists muscimol and THIP. Although glucose utilization was reduced throughout the striatum following GABA agonists, the magnitude of the reductions in the lateral portion of the nucleus were markedly greater than in other portions of the caudate nucleus. This medial/lateral heterogeneity in response to GABA agonists contrasts with the known rostral/caudal heterogeneity in the distribution of biochemical markers for GABA. 22 references. (Author abstract)

002641 Lewis, Michael E.; Mishkin, Mortimer; Bragin, Evgeni; Brown, Roger M.; Pert, Candace B.; Pert, Agu. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Opiate receptor gradients in monkey cerebral cortex: correspondence with sensory processing hierarchies.** Science. 211(4487):1166-1169, 1981.

In order to obtain information on the possible functions of endogenous opiates in the primate cerebral cortex, the distribution of mu-like opiate receptors (which selectively bind 3H labeled naloxone) and omega-like opiate receptors (which selectively bind 3H labeled D-Ala2, D-Leu5-enkephalin) throughout the cerebral cortex of the monkey was examined. Stereospecific (3H)naloxone binding sites increased in a gradient along hierarchically organized cortical systems that sequentially process modality specific sensory information of a progressively more complex nature. Specific (3H)enkephalin binding sites, in contrast, were relatively evenly distributed throughout the cerebral cortex. These results, in combination with electrophysiological studies of monkeys and humans, suggest that mu-like opiate receptors may play a role in the affective filtering of sensory stimuli at the cortical level, that is, in emotion induced selective attention. 29 references. (Author abstract)

002642 Massotti, M.; Guidotti, A.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **The regulation of benzodiazepine recognition sites by endogenous modulators.** Advances in Biochemical Psychopharmacology. 26:19-26, 1981.

The regulation of benzodiazepine recognition sites by endogenous modulators is discussed, and a simple method to solubilize benzodiazepine recognition sites from crude synaptic membrane, and a rapid procedure to remove from the solubilized benzodiazepine sites traces of GABA or other interfering material of small molecular weight are described. Results indicate that rat brain contains a considerable inhibitory activity of 3H-diazepam binding which is pronase sensitive and has a molecular weight higher than that of purines, nicotinamide, or beta-carbolin carboxylate. The activity that can be extracted from the brain is considerable. From 100 mg of rat brain cortex, enough activity to displace 1pmole of diazepam, bound to the purified binding protein, can be extracted. This material is thermostable, pronase sensitive, and acts like an apparent competitive inhibitor of 3H-diazepam binding. Its molecular weight is estimated to be larger than 1,800 daltons. 13 references. (Author abstract modified)

002643 Mohler, H.; Wu, J. -Y.; Richards, J. G. Pharmaceutical Research Dept., Hoffmann-La Roche, CH-4002 Basle, Switzerland **Benzodiazepine receptors: autoradiographical and immunocytochemical evidence for their localization in regions of GABAergic synaptic contacts.** Advances in Biochemical Psychopharmacology. 26:139-146, 1981.

Autoradiographical and immunocytochemical evidence of the localization of benzodiazepine receptors in regions of GABAergic synaptic contacts is reviewed. The demonstration of benzodiazepine receptors in GABAergic synapses is claimed to bridge the gap between the electrophysiological evidence emphasizing the involvement of GABAergic synaptic transmission in the action of benzodiazepines, and the biochemical evidence emphasizing benzodiazepine receptors as the site of action for this group of drugs. The possibility that some benzodiazepines are localized in nonGABAergic synaptic contact regions is noted. 7 references.

002644 Palacios, Jose M.; Unnerstall, James R.; Young, W. Scott, III; Kuhar, Michael J. Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Radiohistochemical studies of benzodiazepine and GABA receptors and their interactions.** Advances in Biochemical Psychopharmacology. 26:53-60, 1981.

Radiohistochemical studies of benzodiazepine receptors and GABA receptors and their interactions are described. Throughout the rat CNS, both benzodiazepine and GABA receptors were found to have heterogeneous distributions, which are different from each other and different from other receptor distributions. Both benzodiazepine receptors and high affinity GABA receptors showed striking variation in their distribution in the brain. Although some areas showed high levels of both benzodiazepine and high affinity GABA receptors, many areas showed elevations in the number of only one of the receptors. Since there is not a fixed ratio between the quantity of benzodiazepine and GABA receptors in all areas, it is suggested that there is not a simple constant relationship between the two receptors. 34 references.

002645 Paul, S.; Marangos, P; Brownstein, M.; Skolnick, P. Clinical Psychobiology Branch, NIMH, Bethesda, MD 20205 **Demonstration and characterization of an endogenous inhibitor of GABA-enhanced (3H)-diazepam binding from bovine cerebral cortex.** Advances in Biochemical Psychopharmacology. 26:103-110, 1981.

The demonstration and characterization are described of low molecular weight substance(s) in bovine brain which is 10-fold to 20-fold more potent in antagonizing the GABA enhanced binding of (3H)diazepam than in antagonizing basal (nonGABA enhanced) binding of (3H)diazepam to receptor sites. The

GABA mediated enhancement of benzodiazepine receptor affinity may represent an important means of expressing the actions of both pharmacological agents and endogenous ligands. Using an aqueous extraction procedure, two peaks were eluted from a Biogel P-6 column which antagonized the GABA enhanced increase in (3H)diazepam binding. The substance(s) contained in one of the peaks (peak II) proved to be far more potent in antagonizing this effect than in displacing (3H)diazepam from non-GABA stimulated membranes, suggesting a specificity for the GABA/benzodiazepine coupling site rather than the benzodiazepine recognition site. 17 references.

02 DRUG DEVELOPMENT (PRECLINICAL SCREENING)

002646 Hunkeler, W.; Mohler, H.; Pieri, L.; Polc, P.; Bonetti, E. P.; Cumin, R.; Schaffner, R.; Haefely, W. Pharmaceutical Research Dept., F. Hoffmann-La Roche & Co., Ltd., CH-4002 Basel, Switzerland **Selective antagonists of benzodiazepines.** Nature. 290(5806):514-516, 1981.

The main properties of a representative (Ro 15-1788) of a novel class of specific benzodiazepine antagonists are described. Compounds were discovered while working on a series of imidazodiazepines, which are potent inhibitors of the specific high affinity binding of 3H-diazepam to brain synaptosomal fractions, but which fail to produce any of the behavioral and neurological effects typical of benzodiazepines. The discovery of such antagonists is analogous to that of opiate antagonists and should be useful as antidotes for intoxications involving overdoses of benzodiazepines. As research tools, it is expected that Ro 15-1788 and other specific benzodiazepine antagonists will be useful in defining the structural properties required for molecules to be recognized and bound by benzodiazepine receptors and to induce or prevent those conformational changes in the receptor protein that result in the typical enhancement of GABAergic transmission. 20 references.

002647 Krogsgaard-Larsen, P.; Falch, E.; Schousboe, A.; Curtis, D. R.; Lodge, D. Dept. of Chemistry BC, Royal Danish School of Pharmacy, DK-2100 Copenhagen O, Denmark **Piperidine-4-sulphonic acid, a new specific GABA agonist.** Journal of Neurochemistry. 34(3):756-759, 1980.

Piperidine-4-sulphonic acid (P4S) depressed the firing of cat spinal neurons in vivo with a potency comparable to that of 3-aminopropranesulphonic acid and greater than that of GABA itself. P4S was also a potent inhibitor of binding to GABA receptor sites in rat brain homogenates, but had no a detectable affinity for the neuronal and glial GABA transport system in mouse brain. Results indicate that P4S is a potent and specific agonist for GABA postsynaptic receptor sites. 27 references.

002648 Leysen, J. E.; Awouters, F.; Kennis, L.; Laduron, P. M.; Vandenberk, J.; Janssen, P. A. J. Janssen Pharmaceutica Research Laboratories, B-2340 Beerse, Belgium **Receptor binding profile of R 41 468, a novel antagonist at 5-HT2 receptors.** Life Sciences. 28(9):1015-1022, 1981.

For a new antiserotonergic agent, R 41 468 and 13 reference compounds with alleged antiserotonergic activity, the receptor binding profile is reported, comprising Ki values measured in 10 different receptor binding models. R 41 468 appears to be a particularly selective agent with respect to differentiation between two 5-hydroxytryptamine (5-HT) receptor models; it primarily displays high binding affinity for 5-HT2 receptors and is inactive at 5-HT1 receptors. Apart from R 41 468, no other compound showed a similar selectivity toward 5-HT2 receptors. In the 5-HT2 and 5-HT1 receptor binding models, the D-receptor antagonist phenoxybenzamine was weakly active and the M-receptor antagonist morphine was inactive. It is concluded that R 41 468 is a particularly suitable tool to antagonize 5-HT action mediated by 5-HT2 receptors. 29 references. (Author abstract modified)

002649 Patrick, Robert L. Neuroscience Section, Division of Biology and Medicine, Brown University, Providence, RI 02912 **Phenylethylamine effects on dopamine synthesis. Structure-activity relationships.** Biochemical Pharmacology. 30(2):141-146, 1981.

The effects of various substituents on phenylethylamine induced and amphetamine induced alterations in dopamine synthesis were studied in rat brain synaptosomal preparations isolated from the corpus striatum. The stimulation of synthesis normally observed with phenylethylamine and amphetamine was converted into inhibition by the addition of a p-hydroxy substituent on the ring. Beta-hydroxy substitution on the side chain somewhat diminished, but did not prevent, synthesis stimulation, whereas the presence of both the beta-hydroxy and p-hydroxy substituents appeared to increase the inhibitory effects. The data suggest that the parent phenylethylamine compounds interact with an intracellular regulatory site, possibly related to calcium flux and/or dopamine release, that is not affected by the p-hydroxy derivatives. 28 rerferences. (Author abstract modified)

002650 Ronai, Andras Z.; Berzetei, Ilona P.; Szekely, Jozsef I.; Miglecz, Erzsebet; Kurgyis, Jozsef; Bajusz, Sandor. Institute for Drug Research, P.O. Box 82, H-1325 Budapest, Hungary **Enkephalin-like character and analgesia.** European Journal of Pharmacology. 69(3):263-271, 1981.

The opioid activities of enkephalin analogues with amino pentane-sulfonic/phosphonic acid at position 5 were studied in the rat tail flick test and in electrically stimulated guinea-pig ileum and mouse vas deferens preparations. The compounds could be classified as met-enkephalin like, beta-endorphin like, (nor)morphine like, or intermediate on the basis of their in vitro activities. Correlation of the in vitro activities with analgesic activity in male CFY rats indicated that enkephalin like character may hinder the expression of analgesic activity after intracerebroventricular or i.v. administration. 45 references. (Author abstract modified)

002651 Vaatstra, W. Jan; Deiman-Van Aalst, Wilhelmina M. A.; Eigeman, Leo. Dept. of Pharmacology, Duphar B.V., P. O. Box 2, Weesp, The Netherlands **DU 24565, a quipazine derivative, a potent selective serotonin uptake inhibitor.** European Journal of Pharmacology. 70(2):195-202, 1981.

The quipazine derivative 6-nitro,2-(1-piperazinyl)quinoline (DU-24565) was a potent and selective inhibitor of 5-hydroxytryptamine (5-HT) uptake in Wistar rat brain synaptosomes and blood platelets. The brain 5-HT depletion induced by p-chloroamphetamine was antagonized by DU-24565 with a median effective oral dose of 0.7mg/kg. A 1mg/kg oral dose of DU-24565 antagonized the decrease in 5-HT induced by 4,alpha-dimethyl-m-tyramine and reduced 5-HT turnover. The compound also potentiated the behavioral effects of 5-hydroxytryptophan (5-HTP) in mice, potentiated the temperature increases caused by 5-HTP in rabbits, and had little or no effect in noradrenaline potentiation tests. Results indicate that DU-24565 may be useful as an antidepressant and as a tool in the study of the role of 5-HT in the CNS. 21 references. (Author abstract modified)

002652 Zetler, G. Institut fur Pharmakologie, Medizinische Hochschule Lubeck, D-2400 Lubeck, West Germany **Central depressant effects of caerulein and cholecystokinin octapeptide (CCK-8) differ from those of diazepam and haloperidol.** Neuropharmacology. 20(3):277-283, 1981.

Caerulein and cholecystokinin octapeptide (CCK-8) produced dose dependent catalepsy and antagonized methylphenidate in-

duced stereotypy in male NMRI mice. The peptides increased the seizure threshold dose for picrotoxin, but not for bicuculline or pentetrazol. Caerulein and CCK-8 shared some but not all typical pharmacological properties of diazepam and haloperidol, but evidenced a generally, more potent central activity than did the reference drugs on a molar basis. 38 references. (Author abstract modified)

03 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

002653 Albertson, T. E.; Peterson, S. L.; Stark, L. G.; Lakin, M. L.; Winters, W. D. Dept. of Pharmacology, School of Medicine, University of California, Davis, CA 95616 **The anticonvulsant properties of melatonin on kindled seizures in rats.** Neuropharmacology. 20(1):61-66, 1981.

The anticonvulsant properties of melatonin were investigated by testing acute doses of melatonin against two types of kindled seizures in the rat (electrically kindled amygdaloid seizure and pentylenetetrazol kindled seizures). Against the electrically kindled amygdaloid seizure, melatonin significantly reduced afterdischarge length at a nonsedative dose, but failed to modify seizure rank scores. Melatonin significantly reduced seizure rank socres in pentylenetetrazol kindled animals. It appears that melatonin is most effective against the kindled pentylenetetrazol seizure, and somewhat less effective against the electrically kindled amygdaloid seizure. It is noted that this is the first report of a substantial anticonvulsant property of parenteral malatonin in two animal models of epilepsy. 49 references. (Author abstract modified)

002654 Alphs, L.; Heller, A.; Lovenberg, Walter. Lovenberg: Section on Biochemical Pharmacology, Hypertension-Endocrine Branch, NHLBI, Building 10, Room 7N262, Bethesda, MD 20205 **Adrenergic regulation of the reduction in acetyl coenzyme A:arylamine N-acetyltransferase activity in the rat pineal.** Journal of Neurochemistry. 34(1):83-90, 1980.

Pharmacologically active agents were used to study the mechanisms that control acetyl-coenzyme-A:arylamine N-acetyltransferase (NAT) activity in the pineal gland of male Sprague-Dawley rats. Results showed that the decrease in NAT activity induced by light could be mimicked by in vivo administration of certain alpha-adrenergic agonists and blocked by alpha-adrenergic antagonists. Control over the rapid reduction in NAT activity appeared to be modulated by two distinct receptors with alpha-adrenergic characteristics and these receptors appeared to be located in the CNS. 16 references. (Author abstract modified)

002655 Altstein, Miriam; Dudai, Yadin; Vogel, Zvi. Dept. of Neurobiology, Weizmann Institute of Science, Rehovot, Israel **Benzodiazepine receptors in chick retina: development and cellular localization.** Brain Research. 206(1):198-202, 1981.

The development and cellular localization of benzodiazepine receptors in chick retina were examined. Benzodiazepine receptors are present in high concentration in the chick retina. Their pharmacological properties are similar to those of the benzodiazepine receptors present in the brain. The retina receptors appear prior to, as well as during, the period of synaptogenesis. In the newborn chick retina, the receptors are localized in the inner synaptic layer, probably on or close to synaptic connections. 19 references. (Author abstract modified)

002656 Altstein, Miriam; Mittman, Scott; Vogel, Zvi. Dept. of Neurobiology, Weizmann Institute of Science, Rehovot, Israel **The effect of barbiturates on the degradation of enkephalin by brain enzymes.** Life Sciences. 28(2):185-191, 1981.

The effects of barbiturates on the degradation of enkephalin by brain enzymes were investigated. It is reported that the activity of the enzyme enkephalinase is inhibited by various barbiturates in a physiological range of concentrations and in accordance with their physiological potency (secobarbital greater than pentobarbital greater than phenobarbital greater than barbital). The N-1-methyl substituted barbiturates, methohexital and hexobarbital, as well as barbituric acid have very low or no inhibitory activity. The barbiturates do not inhibit two other brain enzymes shown to degrade enkephalin, i.e. the enkephalin degrading aminopeptidase and enkephalinase-B. 18 references. (Author abstract modified)

002657 Ambron, Richard T.; Sherbany, Ariel. A.; Schwartz, James H. Dept. of Anatomy, Division of Neurobiology and Behavior, College of Physicians and Surgeons, Columbia University, New York, NY 10032 **Distribution of membrane glycoproteins among the organelles of a single identified neuron of Aplysia. II. Isolation and characterization of a glycoprotein associated with vesicles.** Brain Research. 207(1):33-48, 1981.

The use of anisomycin, an inhibitor of protein synthesis, to examine whether component-I (glycoprotein-I with a molecular weight of 180,000 Daltons) is a constitutent of somatic compound vesicles is reported. In the presence of the drug, (3H)N-acetylgalactosamine injected into R2 (the giant cholinergic neuron in the abdominal ganglion of Aplysia) is incorporated almost exclusively into component-I. Quantitative electron microscopic radioautography of treated cells shows a marked increase in the proportion of silver grains over compound vesicles and a decrease in labeling of other organelles compared with untreated cells. Analysis of component-I, isolated using the chaotropic agent lithium diiodosalicylate, shows it to contain fucose, N-acetylgalactosamine, and N-acetylglucosamine. Proteolytic digestion with pronase yields a complex pattern of glycopeptides. The proportion of (3H)N-acetylgalactosamine in these glycopeptides is altered in the presence of anisomycin. These results suggest that large carbohydrate chains are elaborated within the endoplasmic reticulum and that smaller chains are added in the Golgi region or on the membrane of the compound vesicle. 31 references. (Author abstract modified)

002658 Anden, N. E.; Leander, S. Dept. of Pharmacology, University of Goteborg, Goteborg, Sweden **Effects of 4-aminopyridine on the turnover of monoamines in the central nervous system of the rat.** Journal of Neural Transmission. 44:1-12, 1979.

The effects of 4-aminopyridine (4-AP) on the turnover of 5-hydroxytryptamine, dopamine, and noradrenaline in the central nervous system of rats were studied by means of amine disappearance following inhibition of tryptophan or tyrosine hydroxylase. It was found that 4-AP (3mg/kg i.p) did not change the utilization of 5-hydroxytryptamine or dopamine, but markedly accelerated that of noradrenaline in the brain and in the spinal cord. The stimulatory effect of 4-AP was dependent completely on nerve impulses, since no effect was observed following an acute section of the noradrenaline nerves to the spinal cord. The effect of 4-AP was blocked by the alpha-adrenoreceptor stimulating agent, clonidine. Pentylenetetrazole, at a dose producing similar behavioral changes as 4-AP, caused only a slight stimulation of the noradrenaline turnover. It is concluded that 4-AP may enhance the flux of calcium ions into a nerve terminal during depolarization and thus increase the release of noradrenaline, whereas this process may be of less importance in the dopamine and the 5-hydroxytryptamine nerves. (Journal abstract)

002659 Antelman, Seymour M.; Chiodo, Louis A. Western Psychiatric Institute and Clinic, University of Pittsburgh, School of Medicine, Pittsburgh, PA **Repeated antidepressant**

treatments induce a long-lasting dopamine autoreceptor subsensitivity: is daily treatment necessary for clinical efficacy? Psychopharmacology Bulletin. 17(1):92-94, 1981.

The hypothesis that tricyclic antidepressants (TCA) induce a subsensitivity of presynaptic dopamine (DA) receptors was investigated in rats via single unit studies employing change in DA activity in response to a presynaptic dose of apomorphine as an index of DA autoreceptor sensitivity. Results clearly indicate that subsensitivity of DA autoreceptors must be seriously considered in thinking about transmitter mechanisms which might underlie the therapeutic efficacy of both TCAs and electroconvulsive shock (ECS). It is noted that the ability of acute TCA and ECS treatments to trigger the same subsensitivity effects as those obtained with daily treatment raise the question of whether the delayed therapeutic influence of TCAs and ECS may reflect the development of a time dependent sensitization process. If so, it suggests the possibility that daily TCA or frequent ECS may not be necessary to obtain (and/or maintain) therapeutic efffects. 6 references. (Author abstract modified)

002660 Aronstam, Robert S. Dept. of Pharmacology, Medical College of Georgia, Augusta, GA 30912 **Interactions of tricyclic antidepressants with a synaptic ion channel.** Life Sciences. 28(1):59-64, 1981.

The interactions of four tricyclic antidepressants, including two dibenzazepines (imipramine and desipramine), and two dibenzocycloheptenes (amitriptyline and nortryptiline), were studied with the ion channel associated with the nicotinic aceytlcholine receptor from the electric organs of Torpedo ocellata. These drugs inhibited the binding of tritiated perhydrohistrionicotoxin and phencyclidine to sites on the ion channel. All four compounds interacted with the ion channel with approximately equal affinities, inhibition constants for the two sites ranging from 1.1 to 3.4 mcM in the absence, and from 0.1 to 0.75 mcM in the presence of 1 mcM acetylcholine. The affinities of the secondary amines were increased by acetylcholine to a greater degree than were those of the tertiary amine compounds. 14 references. (Author abstract)

002661 Ayala-Guerrero, F.; Perera-Ortiz, Y.; Vargas, L. Depto. de Neurobiologia, Instituto de Investigaciones Biomedicas, UNAM, Ciudad Universitaria, Mexico 20 DF, Mexico **Phasic activity induced by p-chlorophenylalanine in the auditory pathway.** Neuropharmacology. 20(3):273-275, 1981.

Intraperitoneal injections of p-chlorophenylalanine (PCPA) induced phasic activity in structures of the auditory pathway (cochlear nucleus and auditory cortex) and visual pathway (lateral geniculate body and visual cortex) of cats. Total insomnia was observed 48 to 72 hours after injection of the drug. Similar activity has been observed in other brain structures after administration of PCPA or reserpine and during paradoxical sleep. 18 references. (Author abstract modified)

002662 Bacopoulos, N. G; Roth, R. H. Dept. of Pharmacology, Dartmouth Medical School, Hanover, NH 03755 **Apomorphine-haloperidol interactions: different types of antagonism in cortical and subcortical brain regions.** Brain Research. 205(2):313-319, 1981.

Apomorphine, a dopamine (DA) receptor stimulant, was found to induce a dose dependent decrease in the content of the dopamine metabolites 3,4-dihydroxyphenylacetic acid (DOPAC) and homovanillic acid (HVA) in the olfactory tubercle and striatum of rats, but was ineffective in the frontal cortex. Apomorphine also antagonized the haloperidol induced accumulation of DOPAC and HVA in the olfactory tubercle and striatum, whereas in the frontal cortex it antagonized the effects of haloperidol on DOPAC but not on HVA. THe total (free and conjugated) content of DA metabolites was measured in these studies. 17 references. (Author abstract modified)

002663 Baklavadzhyan, O. G.; Darbinyan, A. G.; Gekht, K; Poppay, M.; Taturyan, I. Kh.; Antonyan, M. N. Lab. fiziologii vegetativnoy nervnoy sistemy Instituta fiziologii im. L. A. Orbeli Akademii nauk Arm SSR, Yerevan, USSR **/Self-stimulation reaction in normotensive and hypertensive rats./** Reaktsiya samorazdrazheniya u normotenzivnykh i gipertenzivnykh krys. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(6):1187-1195, 1980.

Self-stimulation in normotensive and hypertensive rats was studied in 16 male rats in relation to the part of noradrenergic mechanisms in self-stimulation operant behavior. Small doses of noradrenaline facilitated self-stimulation, while high doses depressed or stopped it. The depressive effect was accompanied by a marked increase of systolic blood pressure. Effective blockade of beta-adrenoceptive structures by Inderal suppressed systolic blood presure, and the inhibitory effect was accompanied by a small decrease of systolic blood pressure. The suppressing effect of the alpha-adrenoblocking agent, phentolamine, was even more pronounced, but was accompanied by a marked decrease of systolic blood pressure. Beta-agonist Isadrin facilitated self-stimulation without changing systolic blood pressure. Results suggest that positive reward in the lateral hypothalamus is due to a direct stimulation of beta-adrenoceptive noradrenergic neuronal elements, and that reduction of lever-pressing rate during acute and chronic neurogenic hypertension is related to baroreceptor mechanisms. 30 references. (Journal abstract modified)

002664 Balldin, Jan; Bolle, Paula; Eden, Staffan; Eriksson, Elias; Modigh, Kjell. Psychiatric Research Centre, St. Jorgen's Hospital, S-422 03 HISINGS BACKA, Sweden **Effects of electroconvulsive treatment on growth hormone secretion induced by monoamine receptor agonists in reserpine-pretreated rats.** Psychoneuroendocrinology. 5(4):329-337, 1980.

The effects of electroconvulsive treatment (ECT) on growth hormone (GH) secretion induced by monoamine receptor agonists in reserpine treated rats were investigated. ECT was administered to rats with implanted intraaortic cannulae as one electroconvulsion (ECS) daily for 7 days. ECT pretreated and control rats received identical drug treatments (pretreatment with reserpine and then clonidine, apomorphine, MK-486, or 5-hydroxytryptophan). Combined treatment with clonidine and MK-486 plus 5-hydroxytryptophan induced a more pronounced GH secretion than administration of clonidine alone in both ECT pretreated and in control animals. The response was significantly weaker in the ECT pretreated Ss than in the control animals. Results are in accord with the contentions that ECT changes the responsiveness of postsynaptic receptors sensitive to DA or 5-HT, or neutral structures connected to such receptors. Moreover, they support the view that NA neurons have a fundamental role in the regulation of GH secretion in rats. 30 references. (Author abstract modified)

002665 Barker, Jeffery L.; Mathers, David A. Laboratory of Neurophysiology, National Institute of Neurological and Communicative Disorders and Stroke, NIH, Bethesda, MD 20205 **GABA analogues activate channels of different duration on cultured mouse spinal neurons.** Science. 212(4492):358-361, 1981.

Voltage clamp recordings from mouse spinal neurons grown in culture were used to study the membrane current fluctuations induced by 12 substances that are structurally similar to gamma-aminobutyric acid (GABA). Fluctuation analysis provided estimates of the electrical properties of the elementary events underlying these responses. Estimates of the mean conductance of

channels activated by all of the substances, except glycine, did not differ significantly from that estimated for GABA, whereas mean durations of agonist activated channels all differed significantly from that found for GABA. The results indicate that all of the substances tested, except glycine, activate channels of similar conductance but of different durations. 13 references. (Author abstract modified)

002666 Barker, Jeffery L.; Mathers, David A. Laboratory of Neurophysiology, NINCDS, Bethesda, MD 20205 **GABA receptors and the depressant action of pentobarbital.** Trends in NeuroSciences. 4(1):10-13, 1981.

The research literature concerning GABA receptors and the depressant action of pentobarbital is reviewed, and the question of whether the GABAmimetic effects of pentobarbital involve GABA receptors is considered. Pentobarbital has a variety of cellular actions which would be expected to contribute to depression of CNS excitability. It appears to be able to activate Cl- ion channel like mechanisms in the membrane of CNS neurons possibly through engagement of receptor like sites. Although the elementary signal evoked by the drug has the same amplitude as that activated by GABA and although the drug effect can be antagonized by agents which block GABA responses, it cannot be concluded that the drug activates a GABA receptor coupled Cl- ion conductance. A second action of the barbiturates involves potentiation of GABA responses and this modulatory action also shows some stereospecific requirements. 15 references. (Author abstract modified)

002667 Bartfai, T.; Hedlund, B.; Jarv, J.; Nordstrom, O. Dept. of Biochemistry, Arrhenius Laboratory, S-106 91 Stockholm, Sweden **Muscarinic acetylcholine receptor. (Unpublished paper).** Research Report, NIMH Grant, MH-31107, 1979. 6 p.

Muscarinic acetylcholine receptors from rat cerebral cortex and small intestine were studied by the high affinity and high specific activity antagonists 3H-3-quinuclinidyl benzilate (3-QNB) and 3H-N-methyl-4-piperidinyl benzilate (4-NMPB). A reaction sequence is described, based on equilibrium binding data and studies on association and dissociation rates of the receptor antagonist complex. Results of agonist binding studies carried out under equilibrium conditions can be described as if there were two classes of agonist binding sites with affinities 100mM and 0.05mcM for carbamylcholine. It appears that it is the low affinity binding site that is associated with muscarinic activation of cyclic GMP synthesis in cortical slices and in N1E 115 neuroblastoma cells. Experiments with the cardiotoxin from N. m. mossambica, indicate that the cardiotoxin and D600 may share some common site on the receptor coupled Ca2 channel, or on the muscarinic receptor itself. 11 references. (Author abstract modified)

002668 Becker, Jill B.; Ramirez, V. D. Ramirez: Dept. of Physiology and Biophysics, 524 Burrill Hall, University of Illinois, Urbana, IL 61801 **Sex differences in the amphetamine stimulated release of catecholamines from rat striatal tissue in vitro.** Brain Research. 204(2):361-372, 1981.

Sex and estrous cycle related differences in the amphetamine (AMT) stimulated release of catecholamines (CA) from rat striatal and mediobasal hypothalamus (MBH) fragments were measured in an in vitro perifusion system. In striatal tissue from intact males, AMT stimulated the release of both norepinephrine (NE) and dopamine (DA). The AMT stimulated release of DA from striatal tissue obtained from intact females varied with the stage of the estrous cycle. This increase in DA release was lower in striatal tissue from proestrous females than from females in estrus or diestrus. MBH fragments from intact or gonadectomized rats, with or without hormonal treatment, demonstrated a consistent AMT stimulated release of DA, regardless of the sex of the animal. The AMT stimulated NE release from these MBH fragments was less consistent, but there were not significant differences between the groups. These results demonstrate that the AMT stimulated release of DA from striatal tissue in vitro is sex, hormonal, and tissue dependent. 39 references. (Author abstract modified)

002669 Bergey, G. K.; Fitzgerald, S. C.; Schrier, B. K.; Nelson, P. G. Laboratory of Developmental Neurobiology, NIH, Bethesda, MD **Neuronal maturation in mammalian cell culture is dependent on spontaneous electrical activity.** Brain Research. 207(1):49-58, 1981.

The role of electrical activity in the maturational process observed in fetal mouse spinal cord (SC) and dorsal root ganglion (DRG) cultures was investigated with tetrodotoxin (TTX), the specific blocker of the voltage sensitive sodium channel responsible for action potential generation. This agent completely eliminates the spikes and related synaptic activity which occur abundantly in untreated cultures. Such blockade of electrical activity in the cultures, when begun early (day 1 or day 8 in vitro), results in a 85% to 95% reduction in the number of large SC neurons, without affecting DRG neuron numbers. TTX treatment initiated when cultures are mature (day 70) has no significant effect on either DRG or SC neurons. Intermediate effects are obtained when treatment is initiated at day 35 in vitro. The activity of the nerve specific enzyme, choline acetyltransferase, is decreased significantly by early TTX treatment, while DNA and protein content of the cultures (primarily contributed by glial and fibroblastic cells) is not affected. 31 references. (Author abstract modified)

002670 Bevan, John A. Dept. of Pharmacology, UCLA School of Medicine, Center for Health Sciences, Los Angeles, CA 90024 **A comparison of the contractile responses of the rabbit basilar and pulmonary arteries to sympathomimetic agonists: characteristics.** Journal of Pharmacology and Experimental Therapeutics. 216(1):83-89, 1981.

The characteristics of the alpha-adrenoceptor mediated contractile responses of isolated rabbit basilar and pulmonary arteries to a series of phenethylamines and imidazolines have been compared. Vascular segments from normal and chronically reserpinized rabbits, pretreated in the tissue bath with desmethylimipramine and propranolol and propranolol pretreated segments from chronically denervated basilar arteries were used. The responses of the basilar artery to a series of amines mediated by alpha-adrenoceptors show properties both similar to and different from those of the pulmonary artery. Although the basilar artery is less sensitive and has a peak response less than that of which the tissue is capable, many features of the responses of the two arteries to phenethylamine like compounds are similar. However, the basdilar artery, unlike the pulmonary artery, does not contract in response to imidazoline derivatives. This latter feature has been observed in some other smaller peripheral vessels. 39 references. (Author abstract modified)

002671 Bignami, Giorgio. Istituto Superiore di Sanita, Viale Regina Elena 299, I-00161 Roma, Italy **Pharmacological evidence on the specialization of CNS mechanisms responsible for motor act inhibition by aversive events.** Acta Neurobiologiae Experimentalis. 39(6):395-412, 1979.

Psychopharmacological studies of CNS mechanisms subserving the inhibition of motor acts by aversive events are described. Studies using a go/no go paradigm indicate that perseverative deficits and impairment of sensory processes may be inseparable. The complex profile of cue dependent disinhibitory effects of antimuscarinic agents suggests that separate sensori-

motor mechanisms are employed for response suppression not simply as a function of cue type, response type, or response/reinforcement relations, but as a joint function of all these factors. Sedative/tranquilizing agents with anticonflict properties are maximally effective in disrupting response withholding when both reward and punishment follow the emission of a particular response, are less consistently effective in tests with CS paired with noncontingent shock, and are mostly ineffective in those go/no go avoidance tasks which show high sensitivity to muscarinic blockade. 48 references. (Author abstract modified)

002672 Biswas, B.; Jonsson, G. Jonsson: Dept. of Histology, Karolinska Institutet, S-104 01 Stockholm, Sweden **Reversal of noradrenaline denervation-induced increase of beta-adrenoreceptor binding in rat neocortex by noradrenaline infusion.** European Journal of Pharmacology. 69(3):341-346, 1981.

The effect of intraventricular infusion of (-)-noradrenaline (NA) on beta-receptor (3H-dihydroalprenolol) binding in the cerebral cortex was studied in male Sprague-Dawley rats treated with 6-hydroxydopamine (6-OHDA) or saline shortly after birth. When these animals were 8 to 10 weeks old, the NA level in the cerebral cortex of 6-OHDA treated rats was only 70 to 80% of the control level. Vehicle infusion did not alter beta-adrenoceptor binding in the control animals, but increased binding by 30 to 50% 6-OHDA treated animals. This increase was counteracted by infusion of NA. NA did not alter beta-adrenoceptor binding in control rats when infused at 1mcg/hour, but decreased binding by 24% when infused at 5mcg/hour. Results suggest that the availability of NA at receptor sites regulates the density of beta-adrenoceptor binding and may thereby regulate the NA sensitivity of cells with beta-receptors. 11 references. (Author abstract modified)

002673 Bloxam, D. L.; Tricklebank, M. D.; Patel, A. J.; Curzon, G. Curzon: Dept. of Neurochemistry, Institute of Neurology, MRC Developmental Neurobiology Unit, London WC1N 2NS, England **Effects of albumin, amino acids, and clofibrate on the uptake of tryptophan by the rat brain.** Journal of Neurochemistry. 34(1):43-49, 1980.

Tryptophan uptake into male Sprague-Dawley rat forebrain was substantially influenced by albumin binding and competition from other amino acids, but hypothalamic uptake was less influenced by these factors. When free tryptophan was doubled but total tryptophan was unchanged, uptake was increased by 53% into forebrain and by 28% into hypothalamus. When plasma total tryptophan concentration was decreased by 45% but free tryptophan and competing amino acid concentrations were unchanged, uptake was unchanged. 29 references. (Author abstract modified)

002674 Blume, H. W.; Pittman, Q. J.; Renaud, L. P. Renaud: Division of Neurology, Montreal General Hospital, 1650 Cedar Avenue, Montreal, Quebec H3G 1A4, Canada **Sensitivity of identified medial hypothalamic neurons to GABA, glycine and related amino acids; influence of bicuculline, picrotoxin and strychnine on synaptic inhibition.** Brain Research. 209(1):145-158, 1981.

Medial hypothalamic neurons in pentobarbital anesthetized rats were identified by location and response to electrical stimulation of the amygdala, medial preoptic area, midbrain periaqueductal gray, and median eminence. Cells were then examined for their sensitivity to microiontophoretic applications of GABA, glycine and three related amino acids, i.e. beta-guanidinopropionic acid, delta-aminovaleric acid, and beta-alanine. Application of all agents decreased the spontaneous and glutamate or aspartate evoked activity of the majority of neurons in all identified categories. The majority of neurons were more sensitive to beta-guanidinopropionate, delta-aminovalerate, GABA than to glycine and beta-alanine. Bicuculline and picrotoxin produced a selective and reversible antagonism of depressions evoked by GABA and GABA like amino acids whereas strychnine produced a selective and reversible antagonism of depressions evoked by glycine and beta-alanine. These observations suggest that many medial hypothalamic neurons have both GABA and glycine receptors but that GABA may have the more important role as a neurotransmitter common to afferent or recurrent inhibitory hypothalamic pathways. 41 references. (Author abstract modified)

002675 Bornheim, Lester M.; Borys, Henry K.; Karler, Ralph. Karler: Dept. of Pharmacology, 2C 202 Medical Center, University of Utah College of Medicine, Salt Lake City, UT 84132 **Effect of cannabidiol on cytochrome P-450 and hexobarbital sleep time.** Biochemical Pharmacology. 30(5):503-507, 1981.

The influences of acute and subacute cannabidiol (CBD) treatment and of subsequent drug withdrawal were investigated on hexobarbital induced sleep time, on hepatic cytochrome P-450 concentration, on the in vitro formation of carbon monoxide (CO) associated with CBD metabolism, and on the kinetics of aminopyrine N-demethylase metabolism. In acutely treated mice, CBD prolonged sleep time, decreased cytochrome P-450 concentration, decreased the endogenous formation of CO, and increased an apparent Km for aminopyrine N-demethylase activity. In subacutely treated animals, tolerance developed to the effect on sleep time but not to that on cytochrome P-450 concentration nor on the endogenous formation of CO in vitro nor on the Km for the N-demethylase activity. Results support the conclusion that the CBD effect on sleep time is not correlated with either total amount of cytochrome P-450 or with the CBD depressant effect on the cytochrome. 20 references. (Author abstract modified)

002676 Braestrup, Claus; Nielsen, Mogens; Skovbjerg, Hanne; Gredal, Ole. Research Laboratories. A/S Ferrosan, 5 Sydmarken, DK-2860 Soeborg, Denmark **ß-carboline-3-carboxylates and benzodiazepine receptors.** Advances in Biochemical Psychopharmacology. 26:147-155, 1981.

Studies of beta-carboline-3-carboxylate (beta-CCE), a compound obtained from human urine, which indicate that beta-CCE may be an exogenous ligand for benzodiazepine receptors, are described. Results suggest that tritium labelled propyl beta-carboline-3-carboxylate may be a selective ligand for subclasses of benzodiazepine receptors, in particular the P51 molecular species (cerebellar type) demonstrated by Sieghart and Karobath. Alternatively, true negative cooperativity may exist in the hippocapus and the findings of complexes with a molecular weight of 110,000 daltons may be relevant to the molecular arrangements responsible for these proposed site to site interactions. 31 references.

002677 Brandt, M.; Buchen, C.; Hamprecht, B. Hamprecht: Physiologisch-chemisches Institut des Universitat, Koellikerstr 2, D-8700, Wurzburg, West Germany **Relationship between the actions of calcium ions, opioids, and prostaglandin E1 on the level of cyclic AMP in neuroblastoma X glioma hybrid cells.** Journal of Neurochemistry. 34(3):643-651, 1980.

The influence of calcium ions (Ca2) on the increase in cyclic AMP induced by prostaglandin-E1 (PGE1) in neuroblastoma/glioma hybrid cells and the antagonism of this effect by opioids was studied. The increase in intracellular cyclic AMP induced by PGE1 was strongly dependent on Ca2, but the inhibitory effect of leucine-enkephalin was not Ca2 dependent. Cells exposed to opioids or Ca2 deficiency in short-term experiments had lowered levels of cyclic AMP. In long-term experiments, exposure to opioids or to Ca2 deficiency caused an increased

maximal response to PGE1. 52 references. (Author abstract modified)

002678 Brennan, M. J. W.; Cantrill, R. C.; Krogsgaard-Larsen, P. Brain Research Group, Dept. of Medical Biochemistry, School of Pathology, University of the Witwatersrand, Johannesburg 2001, South Africa **GABA autoreceptors: structure-activity relationships for agonists.** Advances in Biochemical Psychopharmacology. 26:157-167, 1981.

The potency of a number of GABA agonists in inhibiting K stimulated release of 3H-GABA from preloaded rat cortical synaptosomes was investigated and compared with the potency of the drugs in inhibiting specific 3H binding to cortical synaptic plasma membranes. Pharmacological differences between the autoreceptors and the sites labelled with 3H-GABA were analyzed. Data suggest that the GABA autoreceptors and the receptors labelled by 3H-GABA in synaptic membranes show considerable pharmacological similarity. Results provide the first direct correlation between a GABA receptor mediated effect and receptor occupancy. It appears that the autoreceptor is coupled directly to the effector mechanism (presumably a chloride channel) and that there are no spare autoreceptors on the presynaptic terminal. Results suggest that the autoreceptors are distinct from bicuculline insensitive presynaptic GABA receptors and more closely resemble the classical postsynaptic GABA binding site. 35 references.

002679 Briggs, Roger S.; Redgrave, Peter; Nahorski, Stefan R. Dept. of Pharmacology and Therapeutics, Medical Sciences Building, University of Leicester, University Road, Leicester LE1 7RH **Effect of kainic acid lesions on muscarinic agonist receptor subtypes in rat striatum.** Brain Research. 206(2):451-456, 1981.

The neurotoxin kainic acid was employed to attempt to demonstrate a differential cellular localization of muscarinic agonist binding sites in the corpus striatum. Identical proportions of high affinity and low affinity muscarinic agonist sites were observed in kainate lesioned striatum, despite a substantial loss of total muscarinic receptors. Results confirm previous data and suggest that a substantial proportion of striatal muscarinic sites are present on striatal perikarya. Results also suggest that identical proportions of high and low affinity agonist sites are present on striatal cell bodies and on structures (glia, blood vessels, nerve terminals, axons of passage, and surviving cell bodies) remaining after kainate lesions. It is suggested that the separate noninteracting muscarinic agonist sites in brain can occur on the same cell type. 13 references. (Author abstract modified)

002680 Browder, Sally; German, Dwight C.; Shore, Parkhurst A. Dept. of Psychiatry, University of Texas Health Science Center, Dallas, TX 75235 **Midbrain dopamine neurons: differential responses to amphetamine isomers.** Brain Research. 207(2):333-342, 1981.

Responses of midbrain dopamine neurons to amphetamine isomers were investigated. Intravenously administered D-amphetamine and L-amphetamine have different potency ratios in reducing the firing rates of dopamine cells in the substantia nigra and in the ventral tegmental area. While D-amphetamine is considerably more potent than L-amphetamine in reducing ventral substantia nigra dopamine neuronal impulse flow, D and L isomers are of similar potency in reducing dorsal substantia nigra and ventral tegmental dopamine neuronal impulse flow. These results suggest that all dopamine cell groups are not pharmacologically identical and that different dopamine nuclei may respond differently to psychoactive drugs. The comparable potencies of the D and L isomers on dorsal substantia nigra and ventral tegmental area dopamine neurons may explain, by a dopamine mechanism, the finding that comparable doses of the isomers produce schizophrenia like symptoms. 60 references. (Author abstract modified)

002681 Broxterman, Henk J.; Noach, Erik L.; van Valkenburg, Cees F. M.; Wijling, Amerentia. Leiden University Medical Centre, Dept. of Pharmacology, Wassenaarseweg 72, NL-2333 AL Leiden, The Netherlands **Cross-tolerance of dopamine metabolism to baclofen, gamma-butyrolactone and HA-966 in the striatum and olfactory tubercle of the rat.** Life Sciences. 28(9):973-981, 1981.

Cross-tolerance of dopamine (DA) metabolism to baclofen, gamma-butyrolactone (GBL) and HA-966 in the striatum and olfactory tubercle (OT) of the rat is described. Rats received 7 daily injections of one substance or the other. Marked tolerance and cross-tolerance for the DA elevating effect of these drugs was observed in striatum, but not in OT. On day 7, the nigrostriatal pathway was unilaterally lesioned, and some tolerance to the DA increase in the striatum on the lesioned side was observed in HA-966 pretreated rats. However, this tolerance was small compared to the tolerance after an additional drug administration in nonlesioned animals. Results show that the tolerance develops to the increase of DA synthesis, and that this increase is possibly receptor mediated. This tolerance develops more readily in the striatum than in the olfactory tubercle. 34 references. (Author abstract modified)

002682 Bruni, A.; Bigon, E.; Cappellazzo, G.; Boarato, E.; Leon, A.; Toffano, G. Institute of Pharmacology, University of Padova, Padova, Italy **Physiologic and pharmacologic implications in the deacylation of phosphatidylserine in mice.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 119-122).

Research on the physiological and pharmacological implications of the deacylation of phosphatidylserine in mice is reviewed, with emphasis on the influence of lysophosphatidylserine (LPS) on brain energy metabolism. This research demonstrates the ability of LPS to promote the release of amines stored in specialized cells. Specifically, LPS, in combination with endogenous factors (as yet detected only in mouse plasma), triggers the release of amines from intracellular stores with subsequent catecholamine efflux from the adrenals and hyperglycemia. A similar event in the brain may lead to reduced neuronal activity and to glucose accumulation. The possibility of LPS formation in tissues and the minute amount needed for activity indicate that LPS deserves attention as an autocoid compound in vivo. 9 references.

002683 Budek, Michael; Barkai, Amiram I.; Brown, David L.; Fieve, Ronald R. Barkai: New York State Psychiatric Institute, 722 West 168th St., New York, NY 10032 **Suppression of amphetamine-induced EEG arousal in the hippocampus of haloperidol-treated rabbits.** Neuropsychobiology. 7(2):99-104, 1981.

Changes of hippocampal EEG activity resulting from administration of d-amphetamine were investigated in rabbits before, during, and after chronic treatment with haloperidol. Cross-zero analysis of EEG data showed that chronic treatment with haloperidol attenuated the amphetamine induced increase in hippocampal theta rhythm. The increase of theta activity by amphetamine was fully restored 39 days after withdrawal of haloperidol. Further, haloperidol reduced the incidence of spontaneous theta rhythm in three of four animals. It is suggested that the enhancement of hippocampal theta by d-amphetamine is mediated in part by dopaminergic mechanisms which are susceptible to the action of haloperidol. 25 references. (Author abstract modified)

002684 Burchfiel, James L.; Duffy, Frank H. Seizure Unit, Children's Hospital Medical Center, Boston, MA 02115 **Role of intracortical inhibition in deprivation amblyopia: reversal by microiontophoretic bicuculline.** Brain Research. 206(2):479-484, 1981.

The role of intracortical inhibition in deprivation amblyopia and its reversal by microiontophoretic bicuculline were investigated. The GABA antagonist, bicuculline, was microiontophoretically applied to 31 cells in the visual cortices of four cats monocularly deprived of vision from birth to time of study at age 5 months. Bicuculline restored input from the deprived eye to 42% of cells studied. Elevation background firing rates by glutamate failed to restore deprived eye input. It is suggested that intracortical inhibition plays an important role in maintaining the physiological abnormalities produced in visual cortex by monocular deprivation. 22 references. (Author abstract modified)

002685 Burrows, G. Howard; Myers, Michael M.; Whittemore, Scott R.; Hendley, Edith D. Dept. of Obstetrics and Gynecology, Southwestern Medical School, 5323 Harry Hines Blvd., Dallas, TX 75235 **Calcium-sensitive accumulation of norepinephrine in rat cerebral cortex.** European Journal of Pharmacology. 69(3):301-312, 1981.

The accumulation of (3H) l-norepinephrine (3H-NE) was studied in a crude synaptosomal preparation of male Sprague-Dawley rat cerebral cortex. When sodium dependent, high affinity, saturable transport (uptake-1) was blocked, 3H-NE accumulation showed rapid initial rates and was inhibited by metaraminol but not by normetanephrine. This accumulation was calcium sensitive and appeared to be localized in nerve endings. At high concentrations of 3H-NE and short incubation times, calcium sensitive accumulation accounted for most of the total accumulation of 3H-NE; uptake-1 contributed only a small portion. Results suggest that calcium sensitive accumulation may be a significant factor for noradrenergic transmission. 36 references. (Author abstract modified)

002686 Chakravarty, Indira; Ghosh, J. J. All India Institute of Hygiene and Public Health, Government of India, 110, Chittaranjan Avenue, Calcutta 700 073 India **Influence of cannabis and delta9-tetrahydrocannabinol on the biochemistry of the male reproductive organs.** Biochemical Pharmacology. 30(4):273-276, 1981.

The effects of repeated subcutaneous administration of cannabis extract and delta9-tetrahydrocannabinol (THC) on the fructose and citric acid contents of male reproductive organs of prepubertal as well as adult albino rats were studied. Results indicate that both the fructose and the citric acid contents of the male reproductive organs are reduced significantly by cannabis. The reduction further appears to be related to the amount of THC being administered in both young and adult rats. Results corroborate previously reported antitestosteronic action of the drug. 20 references. (Author abstract modified)

002687 Chapin, John K.; Waterhouse, Barry D.; Woodward, Donald J. Dept. of Cell Biology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235 **Differences in cutaneous sensory response properties of single somatosensory cortical neurons in awake and halothane anesthetized rats.** Brain Research Bulletin. 6(1):63-70, 1981.

The effect of halothane anesthesia on different latency components of cutaneous sensory responses of single units in the primary somatosensory (SI) cortex of rats was investigated. Quantitative studies of computer generated poststimulus time histograms were used to determine whether the increase in nonspecific properties often observed in the SI cortices of awake animals were attributable to a generally increased sensory responsiveness of these cells or to a selective increase of certain nonspecific components of their sensory response. Sensory specificity was investigated by measuring the size of cutaneous receptive fields of single cells and testing their ability to follow high stimulus frequencies. It is concluded that although halothane anesthesia slightly depressed the short latency response component (E1a) exhibiting highly specific sensory properties, its main effect was to depress the longer latency excitatory components (E1b and E2) which exhibited relatively nonspecific properties. 23 references. (Author abstract modified)

002688 Childers, Steven R.; Snyder, Solomon H. Snyder: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Differential regulation by guanine nucleotides of opiate agonist and antagonist receptor interactions.** Journal of Neurochemistry. 34(3):583-593, 1980.

Guanosine triphosphate (GTP) had no effect on the binding of tritiated opiate antagonists to male Sprague-Dawley rat brain membranes in the presence of 100mM sodium chloride, but decreased labeled opiate agonist binding by 60 to 95%. In the absence of sodium, GTP decreased binding of agonists by 20 to 60% and that of antagonists by 0 to 20%. Guanosine monophosphate was less potent than GTP or guanosine diphosphate in decreasing agonist binding. GTP increased the association rate of (3H)dihydromorphine twofold and increased the dissociation rate fourfold, but had no efect on the association or dissociation rates of (3H)diprenorphine. The affinities of antagonists in inhibiting (3H)diprenorphine binding were not affected by GTP or sodium, but the affinities of agonists were reduced 40 to 120-fold. Divalent cations, especially manganese, reversed the effects of GTP on agonist binding by stimulating membrane bound phosphatases. It is suggested that GTP, through its selective effect on agonist binding, may regulate opiate receptor interactions with their physiological effectors. 32 references. (Author abstract modified)

002689 Chu, Nai-Shin. Dept. of Neurology, University of California, Irvine Medical Center, 101 City Drive South, Orange, CA 92668 **Caffeine- and aminophylline-induced seizures.** Epilepsia. 22(1):85-94, 1981.

The epileptogenicity of caffeine and aminophylline was studied in rats. Intraperitoneal administration of caffeine produced an immediate excitation and seizures followed by an encephalopathy. A progression from encephalopathy to seizures was observed following aminophylline administration. During the development of behavioral sezures, the EEGs showed a progression from fast activity isolated or bursts of spikes and/or sharp waves to full blown epileptiform discharges. A wide spectrum of cardiac arrhythmias was observed during and following the seizures. Epileptiform activities ranging from isolated or burst of spikes and/or sharp waves to continuous epileptiform discharges were observed following local application of the drugs to the cerebral cortex. 28 references. (Author abstract modified)

002690 Cocchi, D.; Casanueva, F.; Locatelli, V.; Apud, J.; Martinez-Campos, A.; Civati, C.; Racagni, G.; Muller, E. E. Dept. of Pharmacology, University of Milan, I-20129 Milan, Italy **Gabaergic mechanisms in the control of PRL and GH release.** Advances in Biochemical Psychopharmacology. 26:247-259, 1981.

Data concerning the mechanisms subserving the central stimulatory and peripheral inhibitory components of GABA action on prolactin (PRL) release and the action of the GABAergic system on the control of growth hormone (GH) secretion are presented. Use of the specific peripheral GABA antagonist bicu-

culline methiodide (BIC Met I-) blocked the inhibition of PRL release induced by systemic administration of muscimol, thus providing in vivo evidence that peripheral GABA receptors play a major role in this endocrine response. Failure of Bic Met I- to counteract the initial muscimol induced PRL rise substantiates the view that the latter is due to activation of central GABA receptor sites. Preliminary experiments on the involvement of the GABAergic mechanisms in the control of GH secretion suggest that, similar to PRL control, there exists a peripheral inhibitory component (pituitary) in addition to a central GABAergic component stimulatory to GH release. 36 references.

002691 Collingridge, G. L.; Collins, G. G. S.; Davies, J.; James, T. A.; Neal, M. J.; Tongroach, P. School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, England **Effect of tentanus toxin on transmitter release from the substantia nigra and striatum in vitro.** Journal of Neurochemistry. 34(3):540-547, 1980.

The effects of tetanus toxin on the uptake and release of radiolabeled transmitters from slices of male rat substantia nigra (SN) and striatum were studied. Injection of tetanus toxin into the SN 6 hours before slice preparation significantly reduced the calcium dependent, potassium evoked release of (3H)GABA, but did not alter endogenous GABA level or (3H)GABA uptake in the SN. Injections of tetanus toxin into the striatum significantly reduced the calcium dependent, potassium evoked release of (14C)GABA and (3H)dopamine, but had no effect on potassium evoked release of (3H)5-hydroxytryptamine or (14C)acetylcholine. It is concluded that tetanus toxin inhibits GABA release directly rather than by interfering with synthesis or inactivation processes. 29 references. (Author abstract modified)

002692 Connors, Barry W. Dept. of Neurology, Stanford University School of Medicine, Stanford, CA 94305 **A comparison of the effects of pentobarbital and diphenylhydantoin on the GABA sensitivity and excitability of adult sensory ganglion cells.** Brain Research. 207(2):357-369, 1981.

The actions of pentobarbital (PB) and diphenylhydantoin (DPH) on neurons of dorsal root ganglia of adult rats were studied. At anesthetic levels, PB greatly enhanced neuronal responses to GABA. At somewhat higher concentrations, PB caused a small depolarization and profoundly attenuated GABA responses, probably because of cross-desensitization of GABA receptors. In contrast to results in some nonmammalian species, DPH did not affect GABA responses under any conditions. PB depressed single intracellularly evoked action potentials only at high concentrations, but the cell's ability to fire trains of impulses in response to prolonged depolarization was impaired at anesthetic dosage level. Results suggest that the anesthetic properties of PB may depend, in part, on the enhancement of GABA mediated inhibitions and increased accomodation. The anticonvulsant DPH exerts a selective, tetrodotoxin like depression of sodium conductances which does not extend to sodium conductances which are insensitive to tetrodotoxin. 45 references. (Author abstract modified)

002693 Crowley, William R.; Terry, L. Cass. Dept. of Pharmacology, University of Tennessee, Center for the Health Sciences, Memphis, TN 38163 **Effects of an epinephrine synthesis inhibitor, SKF64139, on the secretion of luteinizing hormone in ovariectomized female rats.** Brain Research. 204(1):231-235, 1981.

To test the involvement of central epinephrine systems in luteinizing hormone (LH) secretion, the epinephrine synthesis inhibitor, SKF64139, was administered to ovariectomized rats treated with ovarian hormones. This agent significantly decreased resting LH concentrations in ovariectomized, hormonally untreated rats and completely suppressed the stimulatory feedback effects of estrogen plus progesterone. In these animals, hypothalamic concentrations of epinephrine, but not norepinephrine or dopamine, were significantly decreased. It is suggested that brain epinephrine may participate in the neural control of LH secretion in rats. 21 references. (Author abstract)

002694 Cuche, H. 1, rue Cabanis, F-75674 Paris Cedex, France **/How antidepressant drugs act./** Mecanismes d'action des antidepresseurs. Evolution Psychiatrique. 45(4):767-774, 1980.

The main ways in which antidepressant drugs act at the synaptic level are discussed. It is emphasized that data at present are fragmentary and that there is, consequently, a danger of oversimplification. However, in order to use antidepressants effectively in therapeutic practice, it appears necessary to understand how they act, so that the most appropriate antidepressant is chosen. The therapist is warned against choosing an antidepressant on the basis of habit. (Journal abstract modified)

002695 Dalterio, S. L.; Michael, S. D.; Macmillan, B. T.; Bartke, A. Dept. of Pharmacology, University of Texas Health Science Center at San Antonio, San Antonio, TX 78284 **Differential effects of cannabinoid exposure and stress on plasma prolactin, growth hormone and corticosterone levels in male mice.** Life Sciences. 28(7):761-766, 1981.

The differential effects of cannabinoid exposure and stress on plasma prolactin (PRL), growth hormone (GH), and corticosterone levels in male mice were investigated. Plasma PRL levels were reduced in stressed and nonstressed male mice after a single dose of delta9-tetrahydrocannabinol (THC), while GH levels were reduced only in nonstressed animals. Chronic treatment with THC did not affect PRL or GH levels under either condition. Neither acute nor repeated exposure to THC affected plasma conticosterone levels. In contrast to the effects of THC, acute exposure to cannabinol (CBN) increased plasma GH levels in nonstressed mice, while repeated CBN treatments reduced GH levels in stressed animals. Moreover, chronic CBN exposure resulted in decreased peripheral levels of corticosterone in both stressed and nonstressed mice, and reduced plasma PRL levels in stressed mice. Thus, psychoactive and nonpsychoactive components of marihuana can exert different effects on endocrine function and on responsivity to stress in male mice. 26 references. (Author abstract modified)

002696 Davies, J.; Watkins, J. C. Dept. of Pharmacology, School of Pharmacy, London WC1N 1AX, England **Differentiation of kainate and quisqualate receptors in the cat spinal cord by selective antagonisms with gamma-D(and L)-glutamylglycine.** Brain Research. 206(1):172-177, 1981.

The effects on cat spinal neurons of the D-isomer and L-isomer of gamma-glutamylglycine (gamma-DGG and gamma-LGG), which have been shown to differenitally depress responses to excitatory amino acids in the frog spinal cord, were investigated. Gamma-DGG and gamma-LGG were found to depress N-methyl-D-aspartate (NMDA) induced excitation, L-aspartate induced excitation, and kainate induced excitation in cat spinal cord while having little or no effect on L-glutamate induced responses or quisqualate induced responses. The dipeptides also depress dorsal root evoked exicitation of Renshaw cells, but not acetylcholine evoked or ventral root evoked excitation of these cells. The D-form of the dipeptide is more potent than the L-form. Results are interpreted in favor of three types of receptors for excitatory amino acids on spina neurons, these being sensitive to the selective agonist action of NMDA, kainate, and quisqualate. 29 references. (Author abstract modified)

002697 Davis, Jesse C.; Bigger, J. Thomas, Jr. Bigger: Dept. of Medicine, Columbia University, 630 W. 168th St., New York, NY 10032 **The effects of thioridazine on electrical and ischemic ventricular fibrillation in the dog heart in situ.** Journal of Pharmacology and Experimental Therapeutics. 216(1):39-44, 1981.

The effect of thioridazine on electrical and ischemic ventricular fibrillation in the dog heart in situ was assessed. In 30 chloralose anesthetized dogs, the repetitive response threshold was used to assess vulnerablity during right ventricular stimulation with transvenous catheter electrodes. Both 10mg/kg and 30/mg/kg of thioridazine increased diastolic excitability threshold while only the 30mg/kg dose widened QRS and prolonged Q-Tc. Repetitive response threshold was unchanged. In 45 pentobarbital anesthetized dogs, one stage ligation of the left anterior descending coronary artery was performed after pretreatment with placebo, 10mg/kg or 30mg/kg of thioridazine. Although thioridazine depressed excitability and had no effect on electrical fibrillation threshold, the 30mg/kg dose increased the likelihood of spontaneous ventricular fibrillation during acute ischemia. 41 references. (Author abstract modified)

002698 De Jong, Adrianus P.; Soudijn, Willem. Dept. of Pharmaceutical Chemistry, University of Amsterdam, Plantage Muidergracht 24, 1018 TV Amsterdam, The Netherlands **Relationships between structure and alpha-adrenergic receptor affinity of clonidine and some related cyclic amidines.** European Journal of Pharmacology. 69(2):175-188, 1981.

Of 43 cyclic amidines tested for ability to inhibit specific 3H-clonidine binding to alpha-adrenergic receptors in rat brain, oxymetazoline was the most potent. There was a good correlation between hypotensive activity and alpha2-adrenergic receptor affinity for some 2-(phenylimino)imidazolines. Apparent structural requirements for alpha2-receptor affinity included the presence of an aromatic moiety and au N-hydrogen in the heterocyclic ring. Ortho substitution in the phenyl ring was necessary for high affinity. 55 references. (Author abstract modified)

002699 DeFeudis, Francis V.; Ossola, Lucienne; Schmitt, Gaby; Wolff, Pierre; Mandel, Paul. Centre de Neurochimie, 11 rue Humann, F-67085 Strasbourg Cedex, France **Na-independent binding of (3H)GABA and (3H)muscimol to subcellular particles of neural primary cultures and whole brain.** Journal of Neurochemistry. 34(1):216-218, 1980.

The binding of 3H-GABA ((3H)gamma-aminobutyric acid) and 3H-muscimol to subcellular particles of Wistar rat whole brain and subcellular particles of neuron enriched and astroblast cultures were compared. Results showed that 3H-muscimol was bound to a greater extent than was 3H-GABA to particles of whole brain and of neuron enriched cultures. This finding suggests that muscimol receptors may exist not only in GABA synapses but also in other regions of neuronal membranes. Neither ligand was bound to astroblast particles, indicating the lack of receptor sites on glial membranes. 14 references.

002700 Demarest, K. T.; Moore, K. E. Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **Disruption of 5-hydroxytryptaminergic neuronal function blocks the action of morphine on tuberoinfundibular dopaminergic neurons.** Life Sciences. 28(12):1345-1351, 1981.

Subcutaneous injections of morphine to male rats were found to reduce dopamine (DA) turnover (alpha-methyltryrosine induced decline of DA concentrations) in the median eminence, and increased DA turnover in the striatum. Selective destruction of central 5-hydroxytryptamine (5-HT) neurons with intracerebroventricular injections of 5,7-dihydroxytryptamine, or the administration of metergoline, a putative 5-HT antagonist, blocked the inhibitory effects of morphine on DA turnover in the median eminence. In the same experiments, disruption of 5-HT neurotransmission processes caused similar but less dramatic antagonisms of the stimulatory actions of morphine on DA turnover in the striatum. Thus, 5-HT neurons play a role in mediating the effects of morphine on tuberoinfundibular and possibly on nigrostriatal DA neurons. 29 references. (Author abstract modified)

002701 Dettmar, Peter W.; Cowan, Alan; Walter, Donald S. Dept. of Pharmacology, Reckitt and Colman Pharmaceutical Div., Kingston-upon-Hull HU8 7DS, England **A comparison of the neurochemical effects of buprenorphine with those of morphine and haloperidol in rats.** European Journal of Pharmacology. 69(2):147-153, 1981.

The effects of buprenorphine (0.001 to 10mg/kg), haloperidol (0.01 to 3mg/kg), and morphine (1 to 30mg/kg) on the metabolism of noradrenaline (NA), dopamine (DA), and 5-hydroxytryptamine (5-HT) in male Sprague-Dawley rat brain were compared. Buprenorphine increased the rate of DA depletion after alpha-methyl-p-tyrosine (aMpT), but did not alter the rate of NA depletion. Similar results were obtained with haloperidol and morphine, except that the highest dose of morphine increased the aMpT induced depletion of NA. Naloxone antagonized the increased rate of DA depletion after aMpT in rats given buprenorphine, but not in rats given haloperidol. Naloxone also antagonized the increase in homovanillic acid caused by buprenorphine, but not that caused by haloperidol. It is suggested that buprenorphine, a partial agonist at mu-opiate receptors, may act on opiate receptors located presynaptically on dopaminergic neurons. 42 references. (Author abstract modified)

002702 Deutsch, J. A.; Parsons, S. L. Dept. of Psychology, University of California, San Diego, La Jolla, CA 92093 **Bombesin produces taste aversion in rats.** Behavioral and Neural Biology. 31(1):110-113, 1981.

The effects of bombesin (BBS) on the amount of food eaten were examined in eight male rats. A neutral flavor was paired with an injection of BBS, reported to reduce food intake, in a two bottle conditioned taste aversion test. The neutral flavor was significantly avoided. It is concluded that BBS reduces food intake through some aversive consequences and not through satiation. 8 references. (Author abstract modified)

002703 Dietl, H.; Sinha, J. N.; Philippu, A. Philippu: Dept. of Pharmacology and Toxicology of the University of Wurzburg, Versbacherstrasse 9, D-8700 Wurzburg, West Germany **Presynaptic regulation of the release of catecholamines in the cat hypothalamus.** Brain Research. 208(1):213-218, 1981.

To investigate the presynaptic regulation of the release of catecholamines in the cat hypothalamus, the posterior hypothalamus of cats was superfused through a push/pull cannula and the release of endogenous catecholamines was determined in the superfusate. Superfusion with yohimbine, isoprenaline, salbutamol, or tazolol increased, while superfusion with propranolol decreased, the release of all three catecholamines. Transection of the brain caudal to the hypothalamus inhibited resting and drug induced release. It is concluded that alpha-adrenoceptors and beta-adrenoceptors of the hypothalamus are involved in the regulation of the release of catecholamines. 20 references. (Author abstract modified)

002704 Dodd, Jane; Dingledine, Ray; Kelly, J. S. Kelly: Dept. of Pharmacology, St. George's Hospital Medical School, Jenner Wing, Cranmer Terrace, London SW17 ORE, England **The excitatory action of acetylcholine on hippocampal neurones of the guinea pig and rat maintained in vitro.** Brain Research. 207(1):109-127, 1981.

The excitatory action of acetylcholine (ACh) on hippocampal neurons of the guinea-pig and rat maintained in vitro was investigated. In preliminary experiments on 39 identified pyramidal cells in the in vitro slice preparation of the guinea-pig hippocampus, the depolarization evoked by ACh applied by microionotophoresis always was associated with an increase in membrane resistance. In nine slices cut from rat hippocampus, similar results were obtained from 24 cells. In a more detailed analysis on 13 cells from the rat hippocampus, whose mean resting potential was -74 mV and mean resting input resistance was 33 M Omega, the mean peak depolarization evoked by ACh was 11.6 mV and the mean increase in membrane resistance was 12 M Omega. It is suggested that the slow onset and offset of the responses evoked by ACh are not compatible with models based on diffusion and are best explained by postulating a sequential generation of one or more intermediates. 70 references. (Author abstract modified)

002705 Dupelj, M.; Geber, J. Dept. of Neurology, Medical Faculty, University of Zagreb, 41000 Zagreb, Yugoslavia **Dopamine as a possible neurotransmitter in the spinal cord.** Neuropharmacology. 20(2):145-148, 1981.

Pimozide, a dopamine receptor blocking agent, decreased the amplitude of the spinal monosynaptic mass reflex (MSMR) in spinalized cats, and this effect could not be reversed by L-DOPA. Disulfiram, which inhibits synthesis of noradrenaline from dopamine, induced a moderate increase in MSMR amplitude, and L-DOPA reinforced the effect of disulfiram. Results provided indirect evidence of dopaminergic neurotransmission in the spinal cord. 17 references. (Author abstract modified)

002706 Dyck, Lillian E. Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan, Canada S7N 0X0 **Methylphenidate-like stimulants in vitro release (3H)tyramines but not (14C)dopamine.** European Journal of Pharmacology. 69(3):371-374, 1981.

The effects of methylphenidate, cocaine, nomifensine, and amfonelic acid on the uptake and release of dopamine, m-tyramine, and p-tyramine in male Wistar rat striatal slices were examined. All four stimulants inhibited the uptake of (14C)dopamine, (3H)p-tyramine, and (3H)m-tyramine; the drugs stimulated release of (3H)p-tyramine and (3H)m-tyramine, but not (14C)dopamine. The methylphenidate like stimulants also antagonized the release of (14C)dopamine and (3H)p-tyramine induced by d-amphetamine. Results suggest that the tyramines are transported independently from dopamine. 10 references. (Author abstract modified)

002707 Dyer, R. G.; Murugaiah, K.; Theodorou, A.; Clow, A.; Jenner, P.; Marsden, C. D. Agricultural Research Council, Institute of Animal Physiology, Babraham, Cambridge CB2 4AT, England **During one year's neuroleptic treatment in rats striatal dopamine receptor blockade decreases but serum prolactin levels remain elevated.** Life Sciences. 28(2):167-174, 1981.

The effects of chronic treatment (for 1 year) with either trifluoperazine dihydrochloride or thioridazine dihydrochloride on serum prolactin levels and striatal dopamine receptor function were investigated. Serum prolactin levels at the end of the year remained elevated compared to those in control animals, and the elevation was no different from that obtained by administration of an equivalent acute single oral bolus. In contrast, the inhibition of apomorphine induced stereotypy produced by the acute administration of either drug disappeared during chronic treatment, to be replaced after a year's neuroleptic administration by a supersensitive response. Similarly, the increase in dopamine turnover produced by acute neuroleptic administration, evidenced by raised striatal 3,4-dihydroxyphenylacetic acid levels, also disappeared at the end of a year's treatment, when specific binding of 3H-spiperone to striatal homogenates indicated an increased number of dopamine receptors. 28 references. (Author abstract modified)

002708 Dyer, Robert S.; Howell, William E.; MacPhail, Robert C. Neurotoxicology Division, Health Effects Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711 **Dopamine depletion slows retinal transmission.** Experimental Neurology. 71(2):326-340, 1981.

In male hooded rats, depletion of norepinephrine and dopamine by alpha-methyl-paratyrosine (AMT) was found to increase significantly the latencies of early peaks in flash evoked potentials recorded from the visual cortex, lateral geniculate nucleus, and optic tract. These effects were not produced by depletion of norepinephrine by FLA-63, blockade of muscarinic acetylcholine receptors by scopolamine, or blockade of opiate receptors by naloxone. AMT effects occurred only when flashes were used; optic tract stimulation failed to reveal the drug induced changes. In a dose/response study, haloperidol produced effects similar to those of AMT. L-dopa plus R04-4602 reversed some of the effects of AMT. It is concluded that depletion of retinal dopamine impairs the timing of retinal responses to light. 19 references. (Author abstract)

002709 Eikelboom, Roelof; Stewart, Jane. Stewart: Dept. of Psychology, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, Canada H3G 1M8 **Temporal and environmental cues in conditioned hypothermia and hyperthermia associated with morphine.** Psychopharmacology. 72(2):147-153, 1981.

The effectiveness of temporal and environmental cues in eliciting conditioned hypothermia and hyperthermia was studied in male Wistar rats using an i.p. injection of morphine sulphate as the unconditioned stimulus. The relevance of temporal stimuli was minimized in Experiment 1 by administering morphine at irregular times on alternate days. For one group, morphine injections were preceded and followed by periods in distinctive environments. A second group, though exposed to the environments, received morphine in the home cage on the intervening days. All animals receiving morphine showed a nonspecific hypothermia when not under the direct influence of morphine. A conditioned hyperthermia was evident in the first group in the distinctive environments. In Experiment 2, in which animals remained in their home cages at all times, the relevance of temporal cues was emphasized by administering morphine at exactly 24 hour intervals. These animals became hypothermic only around the time of the expected injection. Animals in another group that received morphine at irregular times showed the nonspecific hypothermia seen previously. There was no evidence for a conditioned hyperthermia in Experiment 2. 28 references. (Author abstract modified)

002710 Eikelboom, Roelof; Stewart, Jane. Dept. of Psychology, Concordia University, 1455 de Maisonneuve Blvd., Montreal, Canada H3G 1M8 **Hypophysectomy increases the sensitivity of rats to naloxone-induced hypothermia.** Life Sciences. 28(9):1047-1052, 1981.

The role of pituitary endorphins in thermoregulation was explored in three experiments. Hypophysectomized rats were found to be hypothermic when compared to intact rats, but showed a hyperthermic response to handling induced stress of equal magnitude to that seen in intact animals. In unstressed, intact, and hypophysectomized animals, the specific opiate antagonist, naloxone, produced a dose dependent hypothermia, but hypophysectomized animals were found to be 10 times more sensitive to naloxone than were the intact animals. In contrast,

short-term blockade of pituitary endorphins by dexamethasone had no effect on the magnitude of the naloxone induced hypothermia. It is concluded that endorphins of pituitary origin play a long-term tonic role in the modulation of the sensitivity of the brain opioid systems. 21 references. (Author abstract modified)

002711 Ellinwood, E. H., Jr.; Kilbey, M. Marlyne. Behavioral Neuropharmacology Section, Dept. of Psychiatry, Duke University Medical Center, Durham, NC 27710 **Fundamental mechanisms underlying altered behavior following chronic administration of psychomotor stimulants.** Biological Psychiatry. 15(5):749-757, 1980.

Fundamental mechanisms underlying altered behavior following chronic administration of psychomotor stimulants are described, and the utility of the chronic psychomotor stimulant model of human psychotic behavior is evaluated. The altered behavior which occurs with chronic administration of psychomotor stimulants appears to be attributable to five major phenomena. One of these, conditioning, involves a global reorganization whose biological bases are little understood. Alterations reflecting kindling mechanisms represent changes in membrane mechanisms resulting in enhanced propagation of electrical signals. A third mechanism involves adaptation of drug metabolism systems, and the final two involve aminergic neuronal functon, i.e., decreased levels of dopamine and possibly alterations in other amine systems and increased number of dopamine receptors. Evidence linking behavioral reorganization as a result of chronic administration of psychomotor stimulants with these phenomena is presented. 58 references. (Author abstract modified)

002712 End, David W.; Carchman, Richard A.; Dewey, William L. Dewey: Dept. of Pharmacology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298 **Interactions of narcotics with synaptosomal calcium transport.** Biochemical Pharmacology. 30(6):674-676, 1981.

The effects of morphine on a process of nerve terminal Ca2 transport which is relevant to excitation/secretion coupling were investigated using the in vitro model developed by Blaustein et al. (1970). Morphine selectively blocked the synaptosomal 45Ca2 uptake induced by depolorization with 60mM KCl. Since the potassium induced influx of Ca2 previously has been shown to be obligatory to synaptosomal secretion coupling, the present findings may represent a molecular mechanism contributing to the antisecretory activity of the narcotics. The relevance of these in vitro neurochemical alterations to specific aspects of the pharmacological activity of morphine is discussed. 35 references.

002713 Enna, S. J.; Ferkany, J. W.; Butler, I. J. Dept. of Pharmacology, University of Texas Medical School at Houston, Houston, TX 77025 **Chronology of neurochemical alterations induced by GABA agonist administration.** Advances in Biochemical Psychopharmacology. 26:181-189, 1981.

The time course and reversibility of receptor alterations (increase in dopamine receptor binding and function and decrease in GABA receptor binding in the rat corpus striatum) induced by chronic administration of either GABA-transaminase (GABA-T) inhibitors or direct acting agonists were investigated. Results indicate that the GABA receptor binding changes precede the dopamine receptor alterations and that both receptor binding changes precede the dopamine receptor alterations and that both receptor changes are completely reversible following cessation of treatment. In addition, the data reveal that the time course of the receptor changes observed does not correlate with the elevation in brain GABA content induced by the GABA-T inhibitor. Furthermore, other findings suggest that tolerance may develop to some of the neurochemical changes induced by acute treatment with GABA agonists. 21 references.

002714 Faden, Alan I.; Jacobs, Thomas P.; Holaday, John W. Dept. of Medical Neurosciences, Walter Reed Army Institute of Research, Washington, DC 20012 **Opiate antagonist improves neurologic recovery after spinal injury.** Science. 211(4481):493-494, 1981.

The opiate antagonist naloxone has been used to treat cats subjected to cervical spinal trauma. In contrast to saline treated controls, naloxone treatment significantly improved neurological recovery. Because naloxone significantly elevates mean arterial pressure in the cat, it is suggested that the beneficial effects of naloxone result from its ability to secondarily improve local spinal cord blood flow. These findings implicate endorphins in the pathophysiology of spinal cord injury, and indicate that narcotic antagonists may have a therapeutic role in this condition. 28 references. (Author abstract modified)

002715 Feldberg, W.; Rocha E Silva, M., Jr. National Institute for Medical Research, Mill Hill, London NW7 1AA, England **Inhibition of vasopressin release to carotid occlusion by gamma-aminobutyric acid and glycine.** British Journal of Pharmacology. 72(1):17-24, 1981.

When applied to the ventral surface of the brainstem between medulla and cord, GABA and glycine markedly attenuated the vasopressin release in response to carotid occlusion in anesthetized cats. Glycine was effective in a concentration of 0.1mg/ml and was about 100 times more potent than GABA. The pressor response to carotid occlusion was not altered. When the amino acids were applied to a more rostral region, they attenuated the pressor response to carotid occlusion, but did not alter vasopressin release. 23 references. (Author abstract modified)

002716 Ferkany, J. W.; Strong, R.; Enna, S. J. Enna: Dept. of Pharmacology, University of Texas Medical School, Houston, TX 77025 **Dopamine receptor supersensitivity in the corpus striatum following chronic elevation of brain gamma-aminobutyric acid.** Journal of Neurochemistry. 34(1):247-249, 1980.

Brain dopamine and gamma-aminobutyric acid (GABA) receptor binding were studied in male Sprague-Dawley rats treated for 15 days with aminooxyacetic acid, isonicotinic acid hydrazide, or gamma-acetylenic GABA. Chronic treatment with the GABA transaminase inhibitors elevated brain GABA content and produced a significant increase in the number of dopamine receptors and caused a significant decrease in GABA receptors in the corpus striatum. Female mice treated with the GABA transaminase inhibitors showed increased apomorphine gnawing responses, this is suggestive of the functional supersensitivity of the striatal dopamine receptors. 19 references.

002717 Feuerstein, G.; Zilberman, Y.; Hemmendinger, R.; Lichtenberg, D. NIMH, Lab. of Clinical Sciences, Building 10, Room 2D-53, 9000 Rockville Pike, Bethesda, MD 20205 **Attenuation of the lithium-induced diabetes-insipidus-like syndrome by amiloride in rats.** Neuropsychobiology. 7(2):67-73, 1981.

The effect of amiloride on lithium induced polydipsia and polyuria and on the lithium concentration in the plasma, brain, kidney, thyroid, and red blood cells was investigated in rats, chronically treated with LiCl. Amiloride reduced the drinking and urine volume of rats in an acute (6 or 12 h) and a subacute (3 days) experiment. Six hours after the administration of amiloride, a reduction was observed in the lithium content of the renal medulla but not in the other organs studied. At 12 h, all the tissues showed a slight increase in lithium levels. After 3 days of combined treatment, a marked elevation in plasma and

tissue lithium levels accompanied a reduction in water intake. In all the experiments, the attenuation of the litium induced diabetes insipidus like syndrome by amiloride was accompanied by a reduction of the ratio between the lithium concentration in the renal medulla and its levels in the blood and an elevation in the plasma potassium level. It is concluded that acute amiloride administration to lithium treated patients suffering from polydipsia and polyuria might relieve these patients but prolonged amiloride supplementation would result in elevated lithium levels and might be hazardous. 13 references. (Author abstract)

002718 Finnerty, E. P.; Chan, S. H. H. Dept. of Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN 55455 **The participation of substantia nigra zona compacta and zona reticulata neurons in morphine suppression of caudate spontaneous neuronal activities in the rat.** Neuropharmacology. 20(3):241-246, 1981.

Morphine (5mg/kg i.v.) depressed single unit activity in the caudate nucleus and substantia nigra zona reticulata of lightly anesthetized rats and increased activity in the substantia nigra zona compacta. These effects were reversed by naloxone (1mg/kg i.v.). Microinjection of morphine into the zona compacta induced a naloxone reversible depression of caudate activity. Direct nigral application of strychnine induced a moderate decrease in caudate activity and an increase in zona compacta discharges. Morphine (5mg/kg i.v.) enhanced the effects of strychnine and depressed reticulata neurons. Results suggest that morphine suppresses caudate spontaneous activity by activating nigrostriatal neurons and inactivating a novel striatonigral pathway. The latter may incorporate reticulata neurons, which may exert tonic inhibition on the compacta cells, possibly using glycine as a neurotransmitter. 34 references. (Author abstract modified)

002719 Forchetti, Concetta M.; Meek, James L. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Evidence for a tonic GABAergic control of serotonin neurons in the median raphe nucleus.** Brain Research. 206(1):208-212, 1981.

Evidence for a tonic GABAergic control of serotonin neurons in the median raphe nucleus is described. Injection into the median raphe nucleus of the GABA antagonists picrotoxin and bicuculline and the GABA agonist muscimol increase and decrease, respectively, the serotonin (5-HT) turnover and the steady-state content of 5-hydroxyindoleacetic acid. Results indicate that the inhibitory effect of GABA on 5-HT neuronal activity in the median raphe nucleus is potentiated by benzodiazepines. Although the hypothesis that the clinically important antianxiety effects of diazepam may be due to its modulation of the GABA 5-HT system requires much more research, these data provide evidence that the proposed interaction of benzodiazepines, GABA, and 5-HT can occur. 16 references. (Author abstract modified)

002720 Frederickson, Robert C. A.; Smithwick, Edward L.; Shuman, Robert; Bemis, Kerry G. Lilly Research Laboratories, Eli Lilly and Co., Indianapolis, IN 46285 **Metkephamid, a systemically active analog of methionine enkephalin with potent opioid delta-receptor activity.** Science. 211(4482):603-605, 1981.

The synthesis and pharmacological testing of a minimally modified analog of methionine enkephalin, that is a systemically active analgesic that has high affinity for the delta receptor, is reported. Since it is at least 100 times potent more than morphine as an analgesic when placed directly into the lateral ventricles and is 30 to 100 times more potent on the delta receptor and yet is roughly equipotent on the mc receptor in vitro, it is concluded that it probably produces analgesia by an action on delta receptors as well as, or rather than, on mc receptors. Experiments with metkephamid in rats are described and it is noted that the drug had less of a tendency to produce respiratory depression, tolerance, and physical dependence than standard analgesics. 23 references. (Author abstract modified)

002721 Freedman, Mark S.; Clark, Bruce D.; Cruz, Tony F.; Gurd, James W.; Brown, Ian R. Brown: Dept. of Zoology, Scarborough College, University of Toronto, West Hill, Ontario M1C 1A4, Canada **Selective effects of LSD and hyperthermia on the synthesis of synaptic proteins and glycoproteins.** Brain Research. 207(1):129-145, 1981.

The selective effects of LSD and hyperthermia on the synthesis of synaptic proteins and glycoproteins were investigated. Protein synthesis in rabbit brain was inhibited following the intravenous injection of LSD. The incorporation of (35S)methionine into brain microsomal and synaptic fractions was decreased by 35% to 45% relative to control values. A selective increase was observed, however, in the relative labeling of a protein of molecular weight 75,000 daltons. When LSD induced hyperthermia was blocked, the general reduction in labeling of microsomal and synaptic proteins still was apparent but the selective increase in relative labeling of the 75,000 dalton protein was not evident. Induction of hyperthermia by means other than LSD produced selective increases in the relative labeling of microsomal and synaptic proteins of molecular weight 75,000 and 95,000 daltons. LSD did not alter the synthesis of synaptic glycoproteins, but it did reduce the synthesis of glycosylated proteins present in the other subcellular fractions. Results suggest that LSD induces selective changes in the synthesis of brain proteins and that the synthesis of synaptic glycoproteins may relatively be resistant to drug administration. 45 references. (Author abstract modified)

002722 Freedman, S. B.; Poat, Judith A.; Woodruff, G. N. Woodruff: Dept. of Physiology and Pharmacology, University of Southamptom, Bassett Crescent East, Southampton S09 3TU, England **The effect of guanosine nucleotides on (3H)sulpiride binding to rat striatal membranes.** European Journal of Pharmacology. 69(1):117-118, 1981.

Drug competition for 3H-sulpiride binding sites in rat striatal membranes was studied in the presence and absence of guanosine nucleotides. Results showed that the guanosine nucleotides decreased the affinity of dopamine agonists for 3H-sulpiride binding sites. These results are not consistent with the current classification of dopamine receptors as D1 (adenylate cyclase linked) and D2 (nonlinked) receptors. 5 references.

002723 Friedman, David P.; Horvath, Fred E. Laboratory of Neuropsychology, NIMH, Bldg. 9, NIH, Bethesda, MD 20205 **Catecholaminergic involvement in phasic versus tonic electrocortical arousal.** Brain Research. 194(2):572-577, 1980.

Short duration, phasically induced arousal was pharmacologically differentiated from long duration, tonic arousal in encephale isole cats. Pretreatment with reserpine (0.4mg/kg) to deplete catecholamines resulted in a selective reduction in the intensity and duration of arousal induced by phasic activation of the reticular formation. Background levels of tonic arousal were not altered by reserpinization. The effects of reserpine on electrocorticogram measures of arousal were not altered by manipulation of 5-hydroxytryptamine levels. 20 references.

002724 Fromm, Gerhard H.; Glass, Jay D.; Chattha, Amrik S.; Martinez, A. Julio. Dept. of Neurology, University of Pittsburgh, School of Medicine, Pittsburgh, PA 15261 **Effect of anticonvulsant drugs on inhibitory and excitatory pathways.** Epilepsia. 22(1):65-73, 1981.

The effect of anticonvulsant drugs on inhibitory and excitatory pathways was investigated in cats. A conditioning stimulus to the periventricular gray matter inhibits the response of spinal trigeminal neurons to maxillary nerve stimulation. Sodium valproate and ethosuximide decrease the periventricular inhibition without significantly affecting the response of these neurons to the unconditioned maxillary nerve stimulus. It is reported that carbamazepine and phenytoin decrease the response to the unconditioned maxillary nerve stimulus, and only depress the periventricular inhibition secondarily. These results further support the hypothesis that the ability to depress selectively inhibitory pathways in the CNS is an important characteristic of antiabsence drugs, and that absence seizures may represent paroxysmal discharges in inhibitory pathways. 38 references. (Author abstract modified)

002725 Fujimoto, Masafumi; Okabayashi, Tadashi. Shionogi Research Laboratories, Shionogi and Co., Ltd., Fukushima-ku, Osaka 553, Japan **Effect of picrotoxin on benzodiazepine receptors and GABA receptors with reference to the effect of Cl- ion.** Life Sciences. 28(8):895-901, 1981.

In the presence of Cl- ion plus low concentrations of GABA, picrotoxin was found to modulate specific (3H)diazepam and (3H)muscimol binding in membranes from rat cerebellum. In the presence of higher concentrations of GABA, picrotoxin inhibited (3H)diazepam binding. This inhibition seems to be the result of reduced GABA binding, which occurred in the presence of picrotoxin and Cl- ion. These results may indicate that benzodiazepine receptors, GABA receptors, and the Cl- ionophore are closely associated with each other. 17 references. (Author abstract modified)

002726 Fuller, R. W.; Snoddy, H. D. Lilly Research Laboratory, Eli Lilly and Co., Indianapolis, IN **Effect of mazindol on brain dopamine turnover in spiperone-treated rats.** Journal of Neural Transmission. 44:13-19, 1979.

Evidence is presented that mazindol, an anorexic drug, causes a large increase in brain 3,4-dihydroxyphenylacetic acid (DOPAC) concentration in spiperone pretreated rats. The increase was dose related over a 1mg/kg to 10mg/kg dose range of mazindol and reached maximum within 1 hour after mazindol injection into rats pretreated 1 hour previously with spiperone. In spiperone pretreated rats, mazindol accelerated the disappearance of dopamine after inhibition of dopamine synthesis by alpha-methyltyrosine. Mazindol apparently resembles amfonelic acid, methylphenidate, and cocaine in facilitating the impulse mediated release of dopamine. (Journal abstract)

002727 Fuxe, K.; Kohler, C.; Agnati, L. F.; Andersson, K.; Ogren, S. -O.; Eneroth, P.; Perez-de-la-Mora, M.; Karobath, M.; Krogsgaard-Larsen, P. Dept. of Histology, Karolinska Institutet, S-104 01 Stockholm, Sweden **GABA and benzodiazepine receptors. Studies on their localization in the hippocampus and their interaction with central dopamine neurons in the rat brain.** Advances in Biochemical Psychopharmacology. 26:61-76, 1981.

The binding of 3H-GABA, 3H-muscimol, and 3H-flunitrazepam in the hippocampus of the rat after lesions of intrinsic cell bodies and transections of various cholinergic and glutamatergic afferents to the hippocampus were investigated. GABA-monoamine interactions were examined in studies of the effects of the GABA transaminase inhibitor, gabuculine, the GABA agonist THIP, and a new GABA mimetic drug, GA 30-905, on monoamine turnover. The effects of SQ 20009, alone and in combination with flunitrazepam or gabaculine, on monoamine turnover were analyzed. By measuring the dopamine turnover in the lateral septal region following ibotenic acid lesions of hippocampal pyramidal cells which are known to give rise to the glutamate innervation of the lateral septum, evidence is provided that glutamatergic pathways may control turnover of the central dopamine pathways. 29 references.

002728 Garcia-Sainz, J. Adolfo; Li, Shih-Ying; Fain, John N. Section of Physiological Chemistry, Division of Biology and Medicine, Brown University, Providence, RI 02912 **Alpha2 adrenergic amines, adenosine and prostaglandins inhibit lipolysis and cyclic AMP accumulation in hamster adipocytes in the absence of extracellular sodium.** Life Sciences. 28(4):401-406, 1981.

The accumulation of cyclic AMP due to adenosine deaminase plus theophylline and either isoproterenol or adrenocorticotropic hormone in the presence of adenosine deaminase plus theophylline, was inhibited by clonidine, N6-(phenylisopropyl)-adenosine and prostaglandin E2. The inhibition was nearly identical in medium containing sodium ions or in medium in which sodium and its accompanying anion were substituted by an isosmotic amount of sucrose. Consistent with this, lipolysis induced by adenosine deaminase and theophylline was significantly inhibited by clonidine, N6-(phenylisopropyl)-adenosine and prostaglandin E2 regardless of the presence or absence of NA in the medium. Results do not support the suggestion that extracellular Na is required for the regulation of cyclic AMP levels by hormones and neurotransmitters that inhibit adenylate cyclase. 17 references. (Author abstract modified)

002729 Garthwaite, John; Regan, Ciaran M. MRC Developmental Neurobiology Unit, Institute of Neurology, 33, John's Mews, London WC1 2NS, England **Toxic effects of alpha-aminoadipate on cultured cerebellar cells.** Brain Research. 194(2):603-607, 1980.

The cytotoxic effects of alpha-aminoadipate (aAA) on cultures of rat cerebellar neurons and nonneuronal cells were studied, and the goals were: to determine whether the selective toxic actions of aAA could be reproduced in vitro, to evaluate aAA's potential utilization in deleting nonneuronal cells from primary neural cultures, and to determine whether aAA's toxiciting is attributable to only one of the isomers. Although the excitatory amino acid antagonist properties of aAA are specific to the D-isomer, toxic properties were associated solely with the L-isomer. L-aAA produced death in cultured neurons, but only at concentrations that were toxic also to nonneuronal cells. 22 references.

002730 Gavish, Moshe; Snyder, Solomon H. Snyder: Dept. of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Benzodiazepine recognition sites on GABA receptors.** Nature. 287(5783):651-652, 1980.

GABA receptors labelled by 3H-muscimol were shown to possess a benzodiazepine recognition site. Benzodiazepines, in proportion to their pharmacological activity, protect 3H-muscimol binding from inactivation by heat and the protein modifying reagent iodoacetamide. GABAergic agents and benzodiazepines were found to exert their protective effects at distinct recognition sites both on the receptors labelled by 3H-flunitrazepam and on those labelled by 3H-muscimol. The synergistic interactions of GABA and diazepam in protecting these receptors suggest that the two sites are allosterically linked. 16 references. (Author abstract modified)

002731 Gekiere, Francoise; Allegre, Guy; Brindeau, Francoise; Borenstein, Pinchas. Ecole Pratique des Hautes Etudes, 54, Avenue de la Republique, F-94800 Villejuif, France **/The action of benzodiazepines on the limbic system compared to other tranquilizers./** Action des benzodiazepines sur le systeme limbique

par rapport a d'autres tranquillisants. Psychologie Medicale. 12(11):2369-2372, 1980.

The effects of benzodiazepines on an animal's limbic system as compared to tranquilizers are studied. A group of cats was administered one of eight benzodiazepines, and, after a certain time interval, a tranquilizer was administered to each cat. The differences in EEG recordings were reported. Results indicate that the benzodiazepines demonstrate a hippocampic delta effect not seen in the tranquilizers. The sedative effects of the drugs remain ambiguous. 2 references. (Journal abstract modified)

002732 Geller, Herbert M. Dept. of Pharmacology, C.M.D.N.J.-Rutgers Medical School, Piscataway, NJ 08854 **Histamine actions on activity of cultured hypothalamic neurons: evidence for mediation by H1- and H2-histamine receptors.** Developmental Brain Research. 1(1):89-101, 1981.

Tuberal hypothalamic tissue cultures were used to investigate the actions of histaminergic agents on neuronal activity using extracellular glass micropipettes. Histamine and H1 and H2 agonists were applied locally onto single active neurons by iontophoresis, while histaminergic antagonists were perfused through the bathing medium. Perievent histogram and ratemeter analysis showed histamine to both excite and depress unit activity. Excitations were only antagonized by putative H1 and not H2 histamine antagonists, whereas inhibitions were antagonized by H2 and not H1 antagonists. Dimaprit, a specific H2 agonist, elicited inhibitions of activity, while 2-(2-pyridyl)ethylamine, a putative H1 agonist, elicited both excitations and inhibitions. Two pharmacologically distinct populations of histamine receptors may exit in the hypothalamus: excitatory H1 receptors and inhibitiory H2 receptors. 41 references. (Author abstract)

002733 Giorguieff-Chesselet, M. F.; Kemel, M. L.; Glowinski, J. no address **The presynaptic stimulating effect of acetylcholine on dopamine release is suppressed during activation of nigro-striatal dopaminergic neurons in the cat.** Neuroscience Letters. 14:177-182, 1979.

Evidence is presented that acetylcholine (ACh) in the presence of eserine stimulates the release of (3H)dopamine (DA) continuously formed from (3H)tyrosine when delivered to a push/pull cannula implanted in the left caudate nucleus of halothane anesthetized cats. This effect is transient and is followed by a second increase in (3H)DA release after removal of ACh and eserine. These changes in (3H)DA release during and after ACh application were no longer seen during activation of the dopaminergic neurons by continuous delivery of substance-P to the ipsilateral substantia nigra (SN). These results indicate that the presynaptic regulations of DA release by ACh is dependent on the rate of firing of nigrostriatal dopaminergic neurons. (Journal abstract)

002734 Goldberg, Michael R.; Gerkens, John F.; Oates, John A.; Robertson, David. Div. of Clinical Pharmacology, Vanderbilt University School of Medicine, Nashville, TN 37232 **Alpha-methylepinephrine, a methyldopa metabolite that binds to alpha-receptors in rat brain.** European Journal of Pharmacology. 69(1):95-99, 1981.

The abilities of epinephrine (EPI), norepinephrine (NE), methyldopa (MD), methylnorepinephrine (MeNE), and methylepinephrine (MeEPI) to compete for 3H-WB-4101 binding sites (alpha1-receptors) and 3H-clonidine binding sites (alpha2-receptors) in male Sprague-Dawley rat brain were compared. The descending order of potency in competing for 3H-WB-4101 binding sites was: EPI and NE, MeNE, MeEPI, MD. For the 3H-clonidine binding site, the descending order of potency was: EPI, MeNE, NE, MeEPI, MD. It is suggested that MeEPI may be the centrally active metabolite through which MD exerts its antihypertensive effect. 11 references. (Author abstract modified)

002735 Gomes, Urbolino C. R.; McCarthy, Brian W.; Shanley, Brian C. Shanley: Dept. of Biochemistry, University of Queensland, St. Lucia, Brisbane, 4067 Australia **Effect of neuroleptics on indoleamine-N-methyltransferase activity and brain metabolism of bufotenin.** Biochemical Pharmacology. 30(6):571-575, 1981.

A range of neuroleptics, nonneuroleptic phenothiazines, and antidepressants were tested for their ability to inhibit purified rabbit lung indoleamine-N-methyltransferase (INMT) and to modify the metabolism of (3H)bufotenin administered intraventricularly. Benperidol and droperiodol proved to be the most potent inhibitors of INMT among the compounds tested. On the other hand, trifluperidol and haloperidol showed no inhibitory activity at concentrations up to 2.5mM, while chlorpromazine, thioridazine, pericyazine and perphenazine were effective only at 250mcM or 2.5mM. Oxidative deamination was shown to be an important pathway in normal rat brain for the metabolism of bufotenin. Of the drugs tested only chlorpromazine elevated the brain ratio of (3H)bufotenin to (3H)5-hydroxyindoleacetic acid whereas primozide and thiothixene caused a decrease in this ratio. These findings suggest that neuroleptic drugs in general do not exert their antipsychotic effects by inhibiting the synthesis or accelerating the oxidative deamination of N,N-dimethylated indoleamines. 29 references. (Author abstract modified)

002736 Gonzalez, J. P.; Sewell, R. D. E.; Spencer, P. S. J. Division of Pharmacology, Welsh School of Pharmacy, University of Wales Institute of Science and Technology, Cardiff, Wales CF1 3NU **Dopaminergic involvement in the hyperalgesic effect of nomifensine.** Life Sciences. 28(8):951-956, 1981.

Nomifensine, a potent inhibitor of both noradrenaline and dopamine reuptake, was found to produce a dose related hyperalgesia in the tail immersion test, using a 45 degrees C stimulus. This activity was abolished by the dopamine antagonists haloperidol and pimozide, but remained unchanged by the relatively selective adrenergic antagonists phentolamine, phenoxybenzamine or propranolol. Thus, it is postulated that there is a dopaminergic involvement in nomifensine hyperalgesia to the exclusion of an adrenergic mechanism. The paradoxical involvement of dopamine in opiate analgesia is discussed in relation to hyperalesia mediated through dopaminergic pathways. 35 references. (Author abstract)

002737 Gordon, C. J.; Heath, J. E. Experimental Biology Division, Environmental Protection Agency, Research Triangle Park, NC 27711 **Temporal patterning of neuronal activity during thermal and neurochemical stimulation of the preoptic/anterior hypothalamus of the awake rabbit.** Neuropharmacology. 20(2):163-168, 1981.

Recordings of preoptic/anterior hypothalamic (POAH) unit activity during POAH cooling were examined for changes in the distribution of interspike intervals (ISI) and coefficient of variation (CV). Cold sensitive neurons showed greater shifts in CV during cooling than warm sensitive or thermoneutral units. Norepinephrine, 5-hydroxytryptamine, and prostaglandin-E2 promoted specific changes in the CV that varied with thermal state. Interconversions between normal, gamma, truncated Poisson, and bimodal ISI distributions were occasionally observed. Results indicate that neurotropic agents can alter the temporal and spatial mechanisms of neuronal integration in the POAH. 20 references. (Author abstract modified)

002738 Grandison, Lindsey. Dept. of Physiology, College of Medicine and Dentistry of New Jersey, Piscataway, NJ 08854 **Anterior pituitary GABA receptors and their regulation of prolac-**

tin secretion. Advances in Biochemical Psychopharmacology. 26:219-227, 1981.

The regulation of prolactin secretion by anterior pituitary GABA receptors was investigated via examination of the effects of the potent and long-acting GABA agonist muscimol on prolactin release. Results indicate that both GABA and GABA agonists can inhibit proclactin release. This response results from the action of GABA agonists on the anterior pituitary gland. This action is both specific and receptor mediated. Blockade of the receptor with a specific receptor antagonist prevents the action on prolactin release. Moreover, specific GABA binding sites have been detected on rat and human anterior pituitary tissue. This GABA inhibitory system is separate from the well established dopamine inhibition of prolactin release. 24 references.

002739 Green, Vicki. Dept. of Psychology, Oklahoma State University, Stillwater, OK 74078 **Adrenal hormones and ethanol ingestion in C57BL/Crgl and C3H/Crgl/2 mice.** Behavioral and Neural Biology. 31(1):56-66, 1981.

The effects of two kinds of corticoid injections (a glucocorticoid and a mineralocorticoid) on the alcohol consumption of two inbred strains of mice were examined. The alcohol consumption of C57BL/Crgl mice decreased significantly when animals of this strain were injected with a solution of 0.2mg of hydrocortisone acetate (a glucocorticoid) every second day. No such significant decrease in alcohol consumption occurred when C3H/Crgl/2 mice were injected with the same solution daily. When administered a solution of 0.5mg of deoxycorticosterone acetate (a mineralocorticoid), neither the C57BL/Crgl injected daily or every other day nor the C3H/Crgl/2 injected daily displayed a significant decrease in alcohol consumption. The results indicate possible involvement of glucocorticoids, rather than mineralocorticoids, in the alcohol preference of mice. 18 references. (Author abstract modified)

002740 Griersmith, B. T.; Duggan, A. W.; North, R. A. Dept. of Pharmacology, John Curtin School of Medical Research, Australian National University, Canberra, Australia **Methysergide and supraspinal inhibition of the spinal transmission of nociceptive information in the anaesthetized cat.** Brain Research. 204(1):147-158, 1981.

In anesthetized cats methysergide was administered while measuring tonically present supraspinal inhibition of excitation of lumbar dorsal horn neurones by cutaneous noxious stimuli or by impulses in unmyelinated primary afferents. In some experiments, inhibition was produced by electrical stimulation near the medullary raphe. Methysergide did not reduce supraspinal inhibition when administered electrophoretically either near the bodies of dorsal horn neurons, in the region of the substantia gelatinosa, or topically to the dorsal surface of the spinal cord. Administered intravenously in doses of up to 2.0mg/kg, methysergide depressed the spinal transmission of nociceptive information and reduced supraspinal inhibition. This latter effect does not result from a blockade of the action of serotonin released by descending fibers, but rather from a depression of the firing of the cells of origin. 43 references. (Author abstract modified)

002741 Griffin, H. D.; Sykes, M.; Hawthorne, J. N. Hawthorne: Dept. of Biochemistry, University of Nottingham Medical School, Queen's Medical Center, Nottingham NG7 2UH, England **Effects of neomycin on calcium and polyphosphoinositide metabolism of guinea pig synaptosomes.** Journal of Neurochemistry. 34(3):750-752, 1980.

The effects of neomycin on polyphosphoinositide metabolism in intact synaptosomes from guinea-pig brain were studied. Results indicated that neomycin did not readily enter intact synaptosomes and that its binding to the external surface of the synaptosomal plasma membrane restricted calcium entry through calcium and sodium ion channels. It is suggested that neomycin may alter polyphosphoinositide metabolism indirectly, by acting on calcium metabolism, rather than by interacting directly with phospholipids. 10 references.

002742 Gross, Gerhard; Schumann, Hans-Joachim. Schumann: Institut fur Pharmakologie, Universitat Essen, Hufelandstrasse 55, D-4300 Essen, West Germany **Enhancement of noradrenaline release from rat cerebral cortex by neuroleptic drugs.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2):103-109, 1980.

Levomepromazine, haloperidol, thioridazine, clozapine, and sulpiride all increased the tritium efflux from electrically stimulated slices of male Sprague-Dawley rat parieto-occipital cortex preincubated in 3H-noradrenaline. The neuroleptics enhanced the stimulation induced noradrenaline release primarily by acting on presynaptic alpha-adrenoceptors. Clozapine, the most potent neuroleptic tested, also inhibited uptake of noradrenaline. Amitriptyline, a tricyclic antidepressant, increased transmitter efflux at the same concentrations and to a similar extent as the neuroleptics. 33 references. (Author abstract modified)

002743 Guarneri, P.; Corda, M. G.; Concas, A.; Biggio, G. Biggio: Institute of Pharmacology, School of Biology, University of Cagliari, Cagliari, Italy **Kainic acid-induced lesion of rat retina: differential effect on cyclic GMP and benzodiazepine and GABA receptors.** Brain Research. 209(1):216-220, 1981.

Intraocular injection of kainic acid was found to cause a marked decrease in GABA content in the rat retina and almost complete loss of glutamate decarboxylase activity in this tissue, within 3 days. Morevover, kainic acid produced a decrease of approximately 65% in the number of both (3H)diazepam and (3H)GABA binding sites without changing the apparent dissociation constants for their ligands. In contrast to that in brain areas, cyclic GMP content in the retina is neither influenced by kainic acid nor by the systemic administration of diazepam and muscimol. 20 references. (Author abstract)

002744 Guerri, Consuelo; Ribelles, Milagro; Grisolia, Santiago. Instituto de Investigaciones Citologicas de la Caja de Ahorros de Valencia, Amadeo de Saboya, 4, Valencia 10, Spain **Effects of lithium, and lithium and alcohol administration on (Na K)-ATPase.** Biochemical Pharmacology. 30(1):25-30, 1981.

The effects of lithium, and lithium plus alcohol on (Na K)-adenosine triphosphatase (ATPase) were investigated in rat and goldfish. An increase in alcohol toxicity by lithium and vanadate was evidenced by the marked decrease found in time response to challenge by 3.1% ethanol of goldfish adapted to lithium or vanadate. The maximal effect (approximately 50%) occurred after 2 days exposure to lithium or vanadate, and it diminished with longer exposure. It was found to be reversible after 2 days immersion in tap water. Lithium intake by fish and rats reduces the brain (Na K)-ATPase activity in 2 and 6 days respectively, to one half that of the brains from control animals, but the enzyme level slowly increased to approximately 90% of the original levels during longer periods of treatment. These results and other data indicate that brain (Na K)-ATPase is affected by lithium and alcohol and that these compounds can interact synergistically on the enzyme. 32 references. (Author abstract modified)

002745 Hall, E. D. Program in Pharmacology, Northeastern Ohio Universities College of Medicine, Rootstown, OH 44272 **Non-serotonergic depression of spinal monosynaptic reflex trans-**

mission by 5-hydroxytryptophan. Neuropharmacology. 20(2):109-114, 1981.

Intravenous administration of 50mg/kg 5-hydroxytryptophan (5-HTP) to acute unanesthetized spinal cats produced a depression of the lumbar monosynaptic response (MSR) amplitude when the reflex was evoked by supramaximal triceps surae nerve stimulation. The effect of 5-HTP was not antagonized by cincanserin, cyproheptadine, or methyldopa. Amitriptyline not only reversed the effect of 5-HTP on the MSR, it increased the MSR above baseline level. Results indicate that 5-HTP has a depressant action on spinal monosynaptic response transmission that is not related to an increase in spinal serotonergic activity. 13 references. (Author abstract modified)

002746 Hansson, Elisabeth; Jacobson, Ingemar; Venema, Richard; Sellstrom, Ake. Sellstrom: Institute of Neurobiology, University of Goteborg, S-400 33 Goteborg 33, Sweden **Measurement of the membrane potential of isolated nerve terminals by the lipophilic cation (3H)triphenylmethylphosphonium bromide.** Journal of Neurochemistry. 34(3):569-573, 1980.

The use of the lipophilic cation (3H)triphenylmethylphosphonium bromide (TPMP) to measure the membrane potential of synaptosomes was examined. Results showed that TPMP is nontoxic and achieves equilibrium in tissue/medium distribution within a reasonable time of incubation. However, the transport of TPMP was somewhat slow. A membrane potential of about -60mv was calculated in normal incubation conditions. Results indicate that TPMP is a useful tool for monitoring relative changes in the membrane potential of synaptosomal particles, but may not be an adequate measure of the absolute value of the membrane potential. 16 references. (Author abstract modified)

002747 Heath, Robert G.; Fitzjarrell, A. T.; Fontana, C. J.; Garey, R. E. Dept. of Psychiatry and Neurology, Tulane University School of Medicine, 1415 Tulane Avenue, New Orleans, LA 70112 **Cannabis sativa: effects on brain function and ultrastructure in rhesus monkeys.** Biological Psychiatry. 15(5):657-690, 1980.

The effects of marihuana smoking on brain function and ultrastructure were investigated in 21 rhesus monkeys (with and without chronically implanted electrodes). Some monkeys were exposed to smoke of active marihuana, some were administered delta9-tetrahydrocannabinol (delta9-THC), and others were exposed to smoke of inactive marihuana (from which all cannabinols had been removed). To deliver smoke to the monkeys, two different apparatuses were used. Dose schedules comparable to those of human marihuana smokers were established, as determined by plasma levels of delta9-THC. After 2 to 3 months' exposure, the monkeys that were heavy and moderate smokers of active marihuana, and those administered delta9-THC developed chronic recoding changes at deep brain sites, most marked in the septal region, hippocampus, and amygdala. These changes persisted throughout the exposure period (6 or 8 months) and during the postexposure observation period (1 to 8 months). Brains of these electrode implanted monkeys, as well as those without electrodes that were exposed to delta9-THC, showed ultrastructural alterations characterized by changes at the synapse, destruction of rough endoplasmic reticulum, and development of nucleuar inclusion bodies. In contrast, brains of monkeys exposed to smoke of inactive marihuana and of unexposed controls showed no ultrastructural changes. Results indicate that exposure to delta9-THC at doses commensurate with those used by human marihuana smokers can produce permanent alterations in brain function and structure of monkeys. 42 references. (Author abstract modified)

002748 Hedler, Liselotte; Stamm, Georg; Weitzell, Rudolf; Starke, Klaus. Starke: Pharmakologisches Institut, Universitat Freiburg, Hermann-Herder Strasse 5, D-7800 Freiburg i.B., West Germany **Functional characterization of central alpha-adrenoceptors by yohimbine diastereomers.** European Journal of Pharmacology. 70(1):43-52, 1981.

Yohimbine, rauwolscine, corynanthine, tolazoline, and azapetine increased the stimulation evoked overflow of tritium from rat occipital cortex slices preincubated with 3H-noradrenaline, without altering basal overflow. Unlabeled noradrenaline, alpha-methylnoradreline, xylazine, and guanabenz decreased the stimulation evoked overflow of tritium. Pseudoyohimbine and prazosin did not alter evoked overflow in concentrations up to 0.1mcM, but higher concentrations enhanced basal overflow of tritium. In vivo, yohimbine (10mg/kg), rauwolscine (10mg/kg), and corynanthine (10mg/kg) accelerated the alpha-methyltyrosine induced disappearance of noradrenaline from male Wistar rat whole brain. Yohimbine and rauwolscine also accelerated the alpha-methyltyrosine induced depletion of dopamine. 32 references. (Author abstract modified)

002749 Heggli, Dag-Erik; Roed, Asbjorn. Roed: Dept. of Physiology and Biochemistry, Dental Faculty, University of Oslo, P. O. Box 1052, Blindern, Oslo 3, Norway **Diphenylhydantoin-induced block of the rat phrenic nerve-diaphragm preparation pretreated with p-hydroxymercuribenzoate.** European Journal of Pharmacology. 70(2):175-182, 1981.

Pretreatment of the Wistar rat phrenic nerve/diaphragm preparations with the sulfhydryl (SH) blocking agent p-hydroxymercuribenzoate (pOHMB) increased the blocking efficiency of the antiepileptic drug diphenylhydantoin (DPH) during indirect stimulation. The SH blocker N-ethyl-maleimide did not potentiate the block, but SH group protection with dithiothreitol abolished the effect of pOHMB. High calcium concentration potentiated the block which was located at the neuromuscular junction. Microelectrode records in preparations that were curarized, cut, or paralyzed with magnesium to abolish action potential activity revealed an abrupt cessation of end plate potentials (EPPs) after addition of DPH. Pretreatment with pOHMB reduced the time to abrupt EPP fallout in the curarized preparation, suggesting depressed nerve terminal excitability as the cause of the block and its potentiation. Miniature EPPs were observed after EPP cessation, excluding a postsynaptic block. Results suggest that the pOHMB treated preparation is a useful model for testing antiepileptic drugs. 25 references. (Author abstract modified)

002750 Hershkowitz, Norman; Ayala, Giovanni F. Dept. of Neurology, Baylor College of Medicine, Texas Medical Center, Houston, TX 77030 **Effects of phenytoin on pyramidal neurons of the rat hippocampus.** Brain Research. 208(2):487-492, 1981.

The effects of phenytoin on membrane properties and inhibitory postsynaptic potentials (IPSPs) in CA1 and CA3 pyramidal neurons of the in vitro rat hippocampus were examined. No significant change was obsered on input resistance or resting membrane potential. Action potential amplitude, overshoot, rate of rise and rate of decay were decreased. IPSP conductance increase and reversal potential, evoked in CA3 cells through mossy fiber stimulation and in CA1 cells through recurrent and Schaffer's collateral stimulation, were unaffected. 24 references. (Author abstract modified)

002751 Hertting, G.; Zumstein, A.; Jackisch, R.; Hoffmann, I.; Starke, K. Pharmakologisches Institut, Hermann-Herder-Strasse 5, D-7800 Freiburg i. Br., West Germany **Modulation by endogenous dopamine of the release of acetylcholine in the caudate nu-**

cleus of the rabbit. Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2):111-117, 1980.

The electrically evoked release of tritium from slices of rabbit caudate nucleus preincubated with 3H-choline was decreased by apomorphine and increased by haloperidol. Nomifensine and cocaine also reduced the evoked overflow of tritium, and this reduction was antagonized by haloperidol. Pretreatment with reserpine plus alpha-methyl-tyrosine methylester increased the electrically evoked overflow, as did bretyllum. Potassium evoked overflow of tritium was also decreased by apomorphine and increased by haloperidol, and these effects were not altered by tetrodotoxin. Results indicate that striatal dopamine receptors resembling D-2 receptors depress the release of acetylcholine and that some of these receptors are located on cholinergic axon terminals. 27 references. (Author abstract modified)

002752 Hicks, T. P.; Guedes, R. C. A.; Creutzfeldt, O. D. Dept. of Neurobiology, Max Planck Institute for Biophysical Chemistry, Postfach 968, Am Fassberg, D-3400 Gottingen, West Germany **Selective synaptic antagonism by atropine and alpha-aminoadipate of pulvinar and cortical afferents to the suprasylvian visual area (Clare-Bishop area).** Brain Research. 208(2):456-462, 1981.

The synaptic excitations of cells of the Clare/Bishop cortical region produced by electrical stimulation of the pulvinar and ipsilateral cortex, have been shown to be differentially antagonized by iontophoretically applied antagonists. Atropine attenuated the responses evoked by pulvinar stimulation without having an appreciable effect against either iontophoretically applied aspartate or cortically evoked responses. Alpha-aminoadipate antagonized asparate elicited excitations and those obtained with cortical stimulation while leaving unaffected acetylcholine and pulvinar evoked resposes. Results are supportive of the view that acetylcholine and aspartate, or a similar excitatory amino acid, act as synaptic transmitters of some afferents from the pulvinar and ipsilateral cerebral cortex, respectively. 40 references. (Author abstract modified)

002753 Ho, Ing K.; Onoda, Kin-Ichi; Flint, Bryan A. Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS 39216 **Effect of chronic administration of phencyclidine on hepatic mixed-function oxidases in the mouse.** Biochemical Pharmacology. 30(5):545-547, 1981.

The effects of chronic administration of phenycyclidine (PCP) on hepatic drug metabolizing enzymes and several other variables of the multifunction oxidase system were investigated. Two groups of male ICR mice were given PCP or saline for 7 days respectively. Another group of mice was given PCP for 7 days followed by 7 more days at twice the dosage level. The bodyweight gain of mice treated with PCP was reduced significantly. Both the hydroxylation of aniline, pentobarbital, and hexobarbital and the N-demethylation of aminopyrine and ethylmorphine were enhanced significantly in groups 2 and 3. Both reduced nicotinamide adenine dinucleotide phosphate (NADPH) dehydrogenase and NADPH-cytochrome-c reductase activities were also increased. Cytochrome P-450 and cytochrome-b5 content, however, were less affected. It is concluded that chronic administration of a high dose of PCP enhances the hepatic drug metabolizing enzyme systems. 29 references.

002754 Homan, Harvey D.; Ziance, Ronald J. Dept. of Pharmaceutical Science, College of Pharmacy and Allied Health, St. John's University, Jamaica, NY 11439 **The effects of d-amphetamine and potassium on serotonin release and metabolism in rat cerebral cortex tissue.** Research Communications in Chemical Pathology and Pharmacology. 31(2):223-240, 1981.

Potassium (K) evoked release of tritiated serotonin (3H-5 HT) from chopped male Sprague-Dawley rat cerebral cortex preincubated with 3H-5 HT was dependent on calcium, but 3H-5 HT release induced by d-amphetamine was not calcium dependent. Potassium also caused a significant increase in the percentage of 3H-5-hydroxyindoleacetic acid (3H-5HIAA) released from the tissue. Incubation with fluoxetine, a selective 5 HT uptake inhibitor, did not alter the increased 3H-5 HIAA formation induced by potassium. Results suggest that d-amphetamine and potassium release 3H-5 HT by different mechanisms. 16 references. (Author abstract modified)

002755 Homma, Shinji. Dept. of Physiology, Faculty of Medicine, Toyama Medical and Pharmaceutical University, 2630 Sugitani, Toyama 930-01, Japan **Depression of ventral root-dorsal root potential by DL-alpha-aminoadipate in frog spinal cord.** Brain Research. 208(1):240-243, 1981.

The depression of ventral root dorsal root potential (VR/DRP) by DL-alpha-aminoadipate (DL-alpha-AAD) in isolated hemisectioned frog spinal cord is reported. It is suggested that acidic amino acid receptors might be subserving for the generation of VR/DRP in addition to the initial cholinergic link between motoneurons and interneurons and the electrical coupling between motoneurons and primary afferent terminals and the 1st step between unidentified interneurons and primary afferent terminals which had been reported to be mediated by GABA. 14 references. (Author abstract modified)

002756 Huidobro-Toro, J. Pablo; Miranda, H.; Huidobro, F. Dept. of Pharmacology, University of California, San Francisco Medical Center, San Francisco, CA 94143 **Development of tolerance to the excitatory effect of morphine and cross-tolerance to the inhibitory action of beta-endorphin in the isolated rat vas deferens.** Life Sciences. 28(7):773-779, 1981.

The development of tolerance to the excitatory effect of morphine and cross-tolerance to the inhibitory action of beta-endorphin were studied in the isolated rat vas deferens. Morphine caused an increase in the neuromuscular twitch evoked by electrical stimulation. In rats chronically treated with morphine, the concentration of the opiate required to cause a 50% increase in the twitch was about three times larger than needed to elicit the same response in vasa from rats treated with a placebo. The simultaneous administration of naloxone plus morphine partially antagonized tolerance development by about 22%. Morphine tolerance was extended to other opiate like alkaloids such as etonitazene and a derivative of azidomorphine. In contrast to the effects of morphine, beta-endorphin inhibited neuromuscular transmission. Vasa from rats chronically treated with morphine were about 10 times less sensitive to the inhibitory effect of beta-endorphin as compared to paired placebo treated controls. Chronic naloxone treatment in conjunction with morphine significantly reduced the cross-opiate tolerance by 66%. Results suggest that morphine may interact at two different sites in the nerve terminals of the rat vas deferens. 24 references. (Author abstract modified)

002757 Huidobro-Toro, J. Pablo; Way, E. Leong. Dept. of Pharmacology, University of California, San Francisco, San Francisco, CA 94143 **Comparative study on the effect of morphine and the opioid-like peptides in the vas deferens of rodents: species and strain differences, evidence for multiple opiate receptors.** Life Sciences. 28(12):1331-1336, 1981.

The effects of an opiate alkaloid and an opioid like peptide were studied on the electrically evoked twitching of the vas deferens of three common laboratory rodents. Normorphine and the synthetic opioid peptide D-Alanine2 methionine enkephalinamide (D-Ala2) produced dose dependent inhibitions of the

twitching response in the mouse vas deferens. In the rat vas deferens, while beta-endorphin caused an inhibitory effect in three strains of rats to a similar degree, morphine produced a dose related enhancement of the twitching. In the guinea-pig, both morphine and beta-endorphin caused an increase in the muscular twitch. Results are interpreted in terms of an heterogeneous mixture of opiate receptors present in the vas deferens from these rodents. The mouse appears to contain mainly delta receptors while the rat has mostly epsilon receptors characterized by their specificity and sensitivity to the action of beta-endorphin. The guinea-pig vas deferens had apparently lost the sensitivity to the inhibitory influence of the opioids, suggesting the absence of mu or delta opiate receptors in this tissue. 18 references. (Author abstract)

002758 Hurd, Russell W.; Hammond, Edward J.; Wilder, B. J. Dept. of Neuroscience, College of Medicine, University of Florida, Gainesville, FL 32610 **Homocysteine induced convulsions: enhancement by vitamin B6 and inhibition by hydrazine.** Brain Research. 209(1):250-254, 1981.

The effects of pyridoxal phosphate, pyridoxine, and hydrazine were studied on homocysteine induced seizures in mice. Both of the B6 vitamers significantly decreased the latency and increased the severity, lethality, and duration of seizures induced by homocysteine. The B6 inhibitor hydrazine sulfate, which is normally a convulsant, prevented the tonic component of the convulsions and increased the latency of the clonic component. Results indicate that a vitamin B6 dependent step is critically involved in the metabolic changes which precede homocysteine seizures. 25 references. (Author abstract)

002759 Hutchinson, Ronald R.; Emley, Grace S. Foundation for Behavioral Research, Augusta, MI 49012 **Nicotine ingestion reduces elevated blood pressures in rats and squirrel monkeys.** Life Sciences. 28(7):801-809, 1981.

The effects of nicotine tartrate added to the home cage drinking water of albino rat and squirrel monkey Ss on blood pressure and behavior were investigated. All Ss receiving nicotine showed reduced blood pressure elevations to noxious stimulation compared to water control Ss, and these reductions were greater at higher drug doses. Squirrel monkeys having high blood pressures showed dose dependent blood pressure decreases, whereas Ss possessing low resting pressures demonstrated little or no blood pressure change during drug intake. Upon termination of drug intake, pressures rapidly increased to predrug levels. Results are concordant with previous studies demonstrating that oral nicotine ingestion causes reductions in aggressive behavior, and suggest that nicotine is selectively influential in altering the biological state of anger, decreasing both its behavioral and somatic components. 34 references. (Author abstract modified)

002760 Hyttel, John. Dept. of Pharmacology and Toxicology, H. Lundbeck & Co. A/S, Ottiliavej 7-9, DK-2500 Valby, Denmark **Similarities between the binding of 3H-piflutixol and 3H-flupentixol to rat striatal dopamine receptors in vitro.** Life Sciences. 28(5):563-569, 1981.

The binding of a tritium labelled thioxanthene neuroleptic, piflutixol, to rat striatal membranes in vitro has been characterized. Neuroleptics were found to inhibit the binding of 3H-piflutixol, 3H-flupentixol, and 3H-haloperidol as well as the dopamine (DA) stimulated adenylate cyclase activity. A detailed analysis of the inhibition of 3H-piflutixol binding by haloperidol and apomorphine revealed two classes of 3H-piflutixol binding sites. It is concluded that 3H-piflutixol binds predominantly to the same class of DA receptors as does 3H-flupentixol. This class, D1 receptors, is associated with acetylcholine activity and is distinct from those labelled by 3H-haloperidol. 14 references. (Author abstract modified)

002761 Idenoue, Junzo. Dept. of Neuropsychiatry, Faculty of Medicine, Kagoshima University, Kagoshima, 890 Japan **Chronological electroencephalographic and neuropharmacological study in cortical kindling rabbits.** Kyushu Neuro-Psychiatry. 25(3-4):191-211, 1979.

Electroencephalographic and behavioral developments in cortical kindling in rabbits were studied chronically; postkindling influences of some drugs on afterdischarge (AD) duration and behavioral changes were tested. Four stages were observed in behavioral development: 1) adversive seizure; 2) adversive seizure with facial twitching; 3) adversive seizure with loss of postural control; and 4) generalized seizure with sudden loss of postural control. AD duration increased progressively, especially after the fourth stage, when waveforms also were changed greatly. Independent interictal discharges (IID) were seen on completion of kindling, especially at the mirror regions. Mutual dependency of EEG activities between the primary focus and the mirror focus was observed after kindling. Diphenylhydantoin, phenobarbital, and diazepam suppressed AD durations and seizures; as did GABOB and sodium valproate but to a lesser degree. L-dopa was ineffective. The low dose of oxyperitine suppressed AD durations, while the high dose of the oxypertine provoked seizure. Eserine and atropine also were examined. The kindling effect as a model of epilepsy makes it possible to screen test potential anticonvulsants. 99 references. (Author abstract modified)

002762 Ientile, R.; Di Giorgio, R. M.; Rotiroti, D.; Nistico, G. Institute of Biochemistry, Faculty of Medicine, University of Messina, Messina, Italy **GABA depletion in chick brain-stem after intraventricular injection of cefazolin.** Research Communications in Chemical Pathology and Pharmacology. 31(2):241-250, 1981.

Injections of cefazolin into the third cerebral ventricle of young chicks caused a dose dependent fall in GABA content in the brainstem. The GABA decrease was evident within 15 minutes, reached its nadir at 60 minutes, and disappeared within 120 minutes. Glutamate decarboxylase and GABA-transaminase activities were not significantly altered. Results suggest that the excitatory and convulsant effects of cefazolin in chicks are related to GABA depletion in the brainstem. 29 references. (Author abstract modified)

002763 Jahnsen, Henrik; Laursen, Arne Mosfeldt. University of Copenhagen, Panum Institute, Institute of Neurophysiology, Blegdamsvej 3 C, DK-2200, Copenhagen N, Denmark **The effects of a benzodiazepine on the hyperpolarizing and the depolarizing responses of hippocampal cells to GABA.** Brain Research. 207(1):214-217, 1981.

The effects of a benzodiazepine on the hyperpolarizing and the depolarizing responses of guinea-pig hippocampal cells to GABA were investigated. Application of GABA in the pyramidal layer close to the impaled cell produced a hyperpolarization. Applied in the stratum radiatum, penetrations of the GABA electrode along a line normal to the pyramidal cell layer produced a depolarizing response. Occasionally, both responses were obtained in sequence beginning with hyperpolarization. This biphasic response was obtained when the tip of the GABA electrode was placed 50 mcm or less from the pyramidal layer. The functional significance of the depolarizing response as well as its enhancements by midazolam are discussed. 11 references.

002764 James, J. Howard; Fischer, Josef E. Dept. of Surgery, University of Cincinnati Medical Center, Cincinnati, OH 45267

Transport of neutral amino acids at the blood-brain barrier. Pharmacology. 22(1):1-7, 1981.

The movement of neutral amino acids across the blood-brain barrier is discussed. Available evidence points to the existence of a single transport system at the luminal capillary surface. Experimental data suggest that amino acid influx is coupled to efflux, particularly efflux of glutamine synthesized in glial astrocytes from ammonia and glutamic acid. Such a coupling could account for increased blood-brain neutral amino acid transport in liver disease and decreased transport activity after treatment with methionine sulfoximine, a glutamine synthetase inhibitor. 40 references. (Author abstract modified)

002765 Janka, Z.; Szentistvanyi, I.; Joo, F.; Juhasz, A.; Rimanoczy, A. Dept. of Neurology, University Medical School, Szeged, Hungary **Effects of lithium on morphological characteristics of dissociated brain cells in culture.** Acta Neuropathologica. 46:117-121, 1979.

Lithium chloride was added in 5 and 10 mM concentrations for different periods of time to dissociated cultures obtained from chicken embryonic brain. Addition of lithium at day 1 in vitro for 5 days resulted in a dose dependent decrease in total protein in the cultures as compared to sodium treated controls. A profound reduction was revealed in the length of neuronal processes and in the number of neuronal cell bodies by phase contrast and morphometric means. After exposure to lithium in 10 mM concentration for 48 hours, a slight decrease in the number of perikaryons and a marked reduction in process length of neural elements was observed in the 6-day-old tissue cultures. Ultrastructurally, swollen and degenerating nerve processes have been found after lithium treatment suggesting a particular sensitivity of these structures to the lithium ion. (Journal abstract)

002766 Johnson, Kenneth M.; Oeffinger, Kevin C. Dept. of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX 77550 **The effect of phencyclidine on dopamine metabolism in the mouse brain.** Life Sciences. 28(4):361-369, 1981.

The effect of phencyclidine (PCP) on dopamine (DA) metabolism in the mouse brain was investigated. Administration of PCP to mice resulted in no change in brain levels of tyrosine, DA, norepinephrine (NE), or homovanillic acid (HVA). Although PCP reduced plasma tyrosine levels, no effect of PCP on the utilization of DA or NE after blockade of synthesis with alpha-methyl-p-tyrosine (AMPT) was observed. In addition, PCP did not affect the probenecid induced accumulation of HVA. However, PCP was observed to potentiate the haloperidol induced increase in HVA concentration, and the haloperidol induced decline in DA levels after AMPT. The former effect was blocked by baclofen, suggesting that PCP mobilizes DA for impulse dependent release. This effect could not be attributed to an antagonism of presynaptic DA receptors. These effects are similar to those of the nonampehtamine stimulant class of drugs. 47 references. (Author abstract modified)

002767 Johnson, S. M.; Duggan, A. W. Dept. of Pharmacology, John Curtin School of Medical Research, Australian National University, Canberra, Australia **Evidence that the opiate receptors of the substantia gelatinosa contribute to the depression, by intravenous morphine, of the spinal transmission of impulses in unmyelinated primary afferents.** Brain Research. 207(1):223-228, 1981.

Evidence that the opiate receptors of the substantia gelatinosa contribute to the depression, by intravenous morphine, of the spinal transmission of impulses in unmyelinated primary afferents is described. In barbiturate anesthetized cats, dorsal horn neurons were excited by electrical stimulation of the common tibial nerve. The numbers of action potentials evoked by excitation of C-fibers were depressed by analgesic doses of morphine. Naloxone, administered electrophoretically in the substantia gelatinosa, fully reversed the inhibitory action of morphine. Results suggest that opiate receptors in the substantia gelatinosa play a role in morphine analgesia. 18 references. (Author abstract modified)

002768 Johnston, G. A. R.; Lodge, D.; Bornstein, J. C.; Curtis, D. R. Dept. of Pharmacology, John Curtin School of Medical Research, Australian National University, Canberra, A.C.T., 2600 Australia **Potentiation of L-glutamate and L-aspartate excitation of cat spinal neurones by the stereoisomers of threo-3-hydroxyaspartate.** Journal of Neurochemistry. 34(1):241-243, 1980.

Threo-3-hydroxy-L-aspartate (THLA) and its stereoisomer threo-3-hydroxy-D-aspartate (THDA) potentiated the excitation of cat spinal neurons by excitants that are taken up actively by the CNS, including L-glutamate, L-aspartate, and D-glutamate. THLA and THDA did not alter excitation by acetylcholine, kainate, and N-methyl-D-aspartate. Results suggest that uptake processes sensitive to THLA and THDA are important for the maintenance of low extracellular concentrations of the excitatory transmitters L-glutamate and L-aspartate. 15 references.

002769 Johnston, G. A. R.; Willow, M. Dept. of Pharmacology, University of Sydney, New South Wales, 2006, Australia **Barbiturates and GABA receptors.** Advances in Biochemical Psychopharmacology. 26:191-198, 1981.

A dose dependent enhancement of GABA binding by pentobarbital which involves an increased affinity of GABA for the higher affinity of the two apparent binding sites is reported in a membrane preparation designed to preserve interaction between endogenous inhibitors and GABA binding sites. The discrepancy between these results and previous studies of the effect of pentobarbital on high affinity GABA binding is attributed to the membrane preparations employed. It is noted that the concentrations of pentobarbital which enhance GABA binding are comparable with those measured in the brain during surgical anesthesia in laboratory animals. 24 references.

002770 Johnston, M. V.; Carman, A. B.; Coyle, J. T. Coyle: Dept. of Pharmacology, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Effects of fetal treatment with methylazoxymethanol acetate at various gestational dates on the neurochemistry of the adult neocortex of the rat.** Journal of Neurochemistry. 36(1):124-128, 1981.

The effects of gestational date (13, 14, 15, and 17 days) of administration of methylazoxymethanol acetate (20mg/kg) on the cortical synaptic chemistry and morphology of the rat was examined in adult offspring. Treatment at 13 days of gestation (DG) resulted in cortical hypoplasia that affected primarily the deep layers whereas treatment at 14 and 15 days gestation caused a severe hypoplasia of cortical neurons above layer V and a 66% to 77% reduction in cortical mass. The 17 DG treatment caused only a 20% reduction in cortical weight with effects apparent only in the superficial layers. At no treatment date did the specific activity of glutamate decarboxylase differ significantly from control. In contrast, presynaptic markers for nonradrenergic (tyrosine hydroxylase and norepinephrine) and for serotonergic (serotonin) terminals were increased in concentration in direct proportion to the degree of cortical hypoplasia. The specific activity of choline acetyltransferase was significantly increased at all treatment dates, but total activity per cortical slab was significantly reduced on treatment days 13 to 15. 17 references. (Author abstract)

002771 Kameyama, Tsutomu; Nabeshima, Toshitaka; Yoshida, Naoyuki; Yamaguchi, Kazumasa. Nabeshima: Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 North State St., Jackson, MS 39216 **Neurochemical studies of an analgesic, 1,3-diphenyl-5-(2-dimethylaminopropionamide)-pyrazole (difenamizole).** Research Communications in Chemical Pathology and Pharmacology. 31(1):31-53, 1981.

Studies in male ddy mice indicated that difenamizole (DFZ) may exert its analgesic activity by inhibiting the release of dopamine (DA) and preventing the binding of DA to receptors. DFZ enhanced the accumulation of DA in the striatum after pargyline. The analgesic also inhibited the following: the binding of 3H-DA to striatal synaptic membranes, the uptake of DA by striatal synaptosomes, and the potassium evoked release of DA in striatal slices. DFZ inhibited monoamine oxidase activity, but did not alter catechol-0-methyltransferase activity. 29 references. (Author abstract modified)

002772 Kamp, Cylia W.; Morgan, William W. Dept. of Anatomy, University of Texas Health Science Center, San Antonio, TX 78284 **GABA antagonists enhance dopamine turnover in the rat retina in vivo.** European Journal of Pharmacology. 69(3):273-279, 1981.

Retinal dopamine turnover in dark adapted male Sprague-Dawley rats was stimulated by intraocular injections of the GABA antagonists picrotoxin and bicuculline methiodide. Atropine pretreatment did not alter this effect. Results suggest that endogenous GABA tonically inhibits dopamine neurons in the dark adapted rat retina. This inhibition appeared to be reduced by exposure to light. 25 references. (Author abstract modified)

002773 Kaneno, Shigeru. Dept. of Neuropsychiatry, School of Medicine, Tokyo Medical and Dental University, Tokyo, Japan **Effects of chlorpromazine on dopaminergic receptor functions in rat brain -- difference of the response of several dopaminergic systems after chronic administration.** Psychiatria et Neurologia Japonica. 82(6):335-352, 1980.

The effects of chlorpromazine on dopamine receptor functions in several rat brain regions were investigated. Ss were adult male Wistar rats. The results of acute treatment indicate that chlorpromazine competitively inhibited dopamine receptors in all brain areas, while 3H-spiroperidol binding activity and dopamine sensitive adenylate cyclase activity showed that dopamine receptor sensitivity increased in the nigrostriatal system but not in the mesocortical system or in some areas of the mesolimbic system. The results indicate that tolerance to extrapyramidal side-effects develops in the early stages of treatment and that antipsychotic drugs have continued blocking effects on dopamine receptors in the mesocortical system and in a part of the mesolimbic system. 45 references. (Author abstract modified)

002774 Karlsen, R. Lund; Grofova, I.; Malthe-Sorenssen, D.; Fonnum, F. Fonnum: Norwegian Defence Research Establishment, Division for Toxicology, P.O. Box 25, N-2007 Kjeller, Norway **Morphological changes in rat brain induced by L-cysteine injection in newborn animals.** Brain Research. 208(1):167-180, 1981.

Morphological changes in rat brain induced by L-cysteine injection in newborn animals are described. A single subcutaneous injection of L-cysteine to rats on postnatal day 4 was followed by atrophy of the brain which was well developed 27 to 32 days after the injection. It is apparent that the lesioned animals can be divided into two groups: 1) in type 1 (80% of Ss), bodyweight was unchanged, but total brain weight was reduced by about 20%; and 2) in type 2 there was a 50% reduction in wet weight of brain and bodyweight. In type 2 (10% of the survivors), the cortex and the hippocampus were reduced by 80% and 60% respectively. In this type of lesion, significant morphological changes were observed in several brain regions such as the caudato/putamen, thalamus, pons, medulla oblongata, spinal cord, and cerebellum. 18 references. (Author abstract modified)

002775 Karobath, Manfred; Drexler, Gerhard; Supavilai, Porntip. Dept. of Biochemical Psychiatry, Psychiatrische Universitatsklinik, A-1090 Vienna, Austria **Modulation by picrotoxin and iptbo of 3H-flunitrazepam binding to the GABA/benzodiazepine receptor complex of rat cerebellum.** Life Sciences. 28(3):307-313, 1981.

The modulation by picrotoxin and IPTBO of 3H-flunitrazepam binding to the GABA benzodiazepine receptor complex of rat cerebellum was investigated. The actions of these two drugs on 3H-flunitrazepam binding to membranes from rat cerebellum include: 1) both drugs in high concentrations stimulate 3H-flunitrazepam binding mainly by increasing the apparent number of binding sites; this effect is chloride ion dependent and reversible; 2) they inhibit 3H-flunitrazepam binding stimulated by the pyrazolopyridine etazolate (SQ 20009), and this effect is observed in binding experiments performed at low and at physiological temperature; 3) they inhibit GABA stimulated binding in a chloride ion dependent mode. This action is much more potent when the binding experiments are performed at physiological temperatures. These results demonstrate that drugs which act on GABA receptor associated chloride ion channels have potent modulatory effects on benzodiazepine receptor binding in cerebellum. 20 references. (Author abstract modified)

002776 Keeton, T. Kent; Krutzsch, Henry; Lovenberg, Walter. Dept. of Pharmacology, University of Texas Health Science Center, San Antonio, TX 78284 **Specific and sensitive radioimmunoassay for 3-methoxy-4-hydroxyphenylethyleneglycol (MOPEG).** Science. 211(4482):586-588, 1981.

Antibodies that specifically bind the norepinephrine metabolite 3-methoxy-4-hydroxyphenylethyleneglcycol (MOPEG) were produced in rabbits after injection of a derivative of MOPEG conjugated with bovine thyroglobulin. A sensitive radioimmunoassay was devised with this antiserum in which as little as 0.5 nanogram of MOPEG can be accurately measured with a final antibody dilution of 1 to 180. The antibody appears to be specific for MOPEG, since tritiated MOPEG was not displaced from the antibodies by norepinephrine, epinephrine, dopamine, serotonin, or their major metabolites, including MOPEG sulfate (333 nanograms each). 20 references. (Author abstract)

002777 Kelley, Keith W. Dept. of Animal Sciences, Washington State University, Pullman, WA 99164 **Lithium, assimilation of nutrients and reproduction. (Unpublished paper).** Final Report, NIMH Grant R01-MH-32812, 1980. 7 p.

The effects of dietary lithium on ovulation rate and embryo mortality, gastrointestinal physiology, and aggressive behavior were investigated. Experiments with female pigs showed that there were no differences among treatments in the length of the estrous cycle, the number of breedings per gilt, the number of corpora lutes, ovarian weight, the number of live embryos, the number of dead embryos, or overall embryo viability. These data suggest that reproductive function in manic-depressive female patients may not be compromised. Even though the data on absorption of glucose in young pigs were confounded partially by feed intake, no obvious differences in energy metabolism or gastrointestinal function were noted. The data confirmed that injectable lithium reduces shock induced aggression in rats and that this antiaggressive effect is removed when the area postrema is lesioned. It was found that area postrema lesions abol-

ish the ability of lithium to condition taste aversions. 4 references.

002778 Kendall, David A.; Stancel, George M.; Enna, S. J. Enna: Dept. of Anatomy, University of Texas Medical School, Houston,TX 77025 **Imipramine: effect of ovarian steroids on modifications in serotonin receptor binding.** Science. 211(4487):1183-1185, 1981.

The effect of ovarian steroids on imipramine induced changes in serotonin receptor binding were studied in female Sprague-Dawley rats. Long-term administration of imipramine caused a decrease in serotonin-2 receptor binding in rat brain cerebral cortex, an effect that was abolished by ovariectomy. In contrast, ovariectomy had no effect on imipramine induced decreases in hippocampal serotonin or in cerebral cortical and hippocampal beta-adrenergic receptor binding. Administration of estradiol or progesterone separately or in combination reestablished the effect of imipramine treatment on cortical serotonin-2 receptors. These results suggest that ovarian steroids may play an important, but subtle, role in the neurochemical and perhaps clinical response to this antidepressant drug. 17 references. (Author abstract modified)

002779 Kennett, G. A.; Joseph, M. H. Division of Psychiatry, MRC Clinical Research Centre, Watford Road, Harrow, Middlesex HA1 3UJ, England **The functional importance of increased brain tryptophan in the serotonergic response to restraint stress.** Neuropharmacology. 20(1):39-43, 1981.

The increase in brain tryptophan induced by restraint stress in rats was shown to be prevented by prior administration of valine, 200mg/kg (i.p.). Brain 5-hydroxytryptamine (5-HT) was not depleted, but the stress induced increase in 5-hydroxyindoleacetic acid (5-HIAA) was prevented. A 5-HT mediated functional response to stress, elevated plasma corticosterone was, however, significantly attenuated by valine pretreatment, but was not affected by valine treatment alone. This suggests that the increase in 5-HIAA in brain is not merely secondary to increased brain tryptophan, but indicates an increase in functional 5-HT activity, which is in turn at least partly dependent on the increase in brain tryptophan. Measurement of kynurenine levels in the same animals indicated an increase in synthesis in stress, but did not support the hypothesis that competition occurs between the kynurenine and 5-hydroxyindole pathways of tryptophan metabolism in brain. 30 references. (Author abstract modified)

002780 Kesner, Raymond P.; Partlow, Lester M.; Bush, Lloyd G.; Berman, Robert F. Dept. of Psychology, University of Utah, Salt Lake City, UT **A quantitative regional analysis of protein synthesis inhibition in the rat brain following localized injection of cycloheximide.** Brain Research. 209(1):159-176, 1981.

Inhibition of protein synthesis following bilateral injection of cycloheximide (CHX) was quantified in various brain regions of rats (amygdala, internal capsule, caudate, cortex, hippocampus, thalamus, hypothalamus, and the entire half brain). Regional inhibition of protein synthesis was determined by analysis of autoradiograms from different brain levels using an image analyzing computer to measure the optical densities of microscopic areas corresponding to discrete neuroanatomical structures. Since injection of CHX into the amygdala resulted in a profound inhibition of protein synthesis in both the amygdala and internal capsule while injection into the internal capsule only caused a marked inhibition in the capule itself, these results provide a possible explanation for the observation that injection of CHX into the amygdala produced a retention deficit while injection into the adjacent internal capsule had no effect on memory function. Amygdaloid function rather than brain functioning in general is implicated in the CHX induced impairment of memory. 13 references. (Author abstract modified)

002781 Kim, Jang-Soo; Uchimura, Hideyuki; Hirano, Makoto; Saito, Masashi; Matsumoto, Takashi; Nakahara, Tatsuo. Laboratory of Neurochemistry, Hizen National Mental Hospital, Kanzaki, Saga, 842-01, Japan **Type B monoamine oxidase activities toward beta-phenylethylamine in discrete hypothalamic and circumventricular nuclei of the rat.** Biochemical Pharmacology. 30(8):893-895, 1981.

Type-B monoamine oxidase (MAO) activities toward beta-phenylethylamine (PEA) in discrete hypothalamic and circumventricular nuclei of the rat were studied in freeze dried sections using radiochemical micromethods. Of the hypothalamic nuclei and circumventricular regions examined, PEA/MAO activities varied about five fold between the regions with the highest and the lowest values. The highest activities were found in the posterior part of the nucleus arcuatus; the nucleus hypothalamicus anterior, the nucleus hypothalamicus posterior, and the medial part of the lateral hypothalamic area had low PEA/MAO activities. Results indicate directly that the circumventricular regions or nuclei are generally rich in type-B MAO and that an active metabolism of PEA, or of other endogenous monoamines specific for type-B MAO, may occur in those regions. 23 references.

002782 King, W. Michael; Kreisman, Norman R. Kreisman: Dept. of Physiology, Tulane University School of Medicine, New Orleans, LA 70112 **Trimethadione effects on cholinergic responses in Aplysia neurons.** Brain Research. 209(1):221-226, 1981.

The anticonvulsant, trimethadione (TMO), was tested for effects on cholinergic responses to iontophoretic application of acetylcholine on identified neurons in Aplysia. TMO (1 to 10mM) depressed the amplitudes of depolarizing responses mediated by Na and hyperpolarizing responses mediated by Cl- but did not affect hyperpolarizing responses mediated by K. Such a combination of effects on cholinergic responses distinguishes the action of this antiabsence drug from agents effective against tonic/clonic seizures and from convulsant drugs. 18 references. (Author abstract)

002783 Kitchen, Ian; Hart, Stephen L. Dept. of Pharmacology and Therapeutics, London Hospital Medical College, Turner St., London E1 2AD, England **Differential loss of biological activity of the enkephalins induced by current.** European Journal of Pharmacology. 69(3):393-396, 1981.

Passage of current across solutions of enkephalins caused a loss of biological activity of the peptides proportional to the strength of the current. The presence of a mouse vas deferens prevented the current induced loss of activity of leu-enkephalin, but had no effect on the loss of activity of met-enkephalin. These results may account for the differential potency of the enkephalins on the vas and for the inability of several laboratories to show electrically induced enkephalin release. 10 references. (Author abstract modified)

002784 Kleshchinov, V. N. Laboratoriya eksperimental'noy patologii i patomorfologii mozga Instituta Psikhiatrii AMN SSSR, Moskva, USSR /**Changes in the cortical activity of succinate dehydrogenase under the influence of chlorpromazine (a histochemical and electrocytochemical study).**/ Izmeneniya aktivnosti suktsinatdegidrogenazy v kore golovnogo mozga pod vliyaniyem aminazina (gistokhimicheskoye i elektronno-tsitokhimicheskoye issledovaniye). Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(7):1024-1027, 1980.

The activity and location of succinate dehydrogenase (SDH) in the cortex of the brains of rats were studied before and after

the administration of chlorpromazine in the amount of 15 mg/kg. Changes in the enzyme activity according to photometry occurred in two ways: a general decrease in the activity of neurons and neuropil, and a decrease in the number of neurons reacting to SDH. Ultrastructurally the enzyme was detectable in the mitochondria of the cell body, adjacent processes and in the processes of cells surrounding the blood vessels. In most of the neuropil mitochondria the produce of the reaction was not found. Under the influence of chlorpromazine dark neurons appeared lacking organelles containing products of reaction. There were also light neurons in the mitochondria without products of reaction, and lipofucsin granules containing products of reaction. Results explain the drop in the SDH activity, found during photometry of histochemical changes. 11 references. (Journal abstract modified)

002785 Koch, Kevin M.; Ludwick, B. Teri; Levy, Rene H. Levy: Dept. of Pharmaceutics, School of Pharmacy, Bagley Hall BG-20, University of Washington, Seattle, WA 98195 **Phenytoin -valproic acid interaction in rhesus monkey.** Epilepsia. 22(1):19-25, 1981.

The interaction between phenytoin (PHT) and valproic acid (VPA) was investigated in the rhesus monkey. PHT was given by multiple IV bolus to reach a steady-state and then continued while two successive VPA infusions were added. Plasma was assayed for total VPA and PHT as well as free PHT. The addition of VPA produced no change in total PHT levels, a 50% increase in PHT free fraction (increase in free PHT levels), and a decrease in PHT overall elimination rate constant. The increase in free fraction was also documented in a separate in vitro study. The increase in free PHT levels suggested that VPA decreased PHT intrinsic metabolic clearance. This interaction may thus involve a dual mechanism, protein binding displacement of PHT and inhibition of PHT metabolism. This mechanisms is compatible with other studies showing that VPA is an ihibitor of drug metabolism. 27 references. (Author abstract modified)

002786 Koe, B. Kenneth. Dept. of Pharmacology, Central Research, Pfizer Inc., Groton, CT 06340 **Levonantradol, a potent cannabinoid-related analgesic, antagonizes haloperidol-induced activation of striatal dopamine synthesis.** European Journal of Pharmacology. 70(2):231-235, 1981.

Levonantradol antagonized the compensatory acceleration of striatal dopamine synthesis induced by haloperidol in male Sprague-Dawley rats. The enantiomer dextronantradol was 30 times less effective. The haloperidol effect was also attenuated by delta9-tetrahydrocannabinol, but at a dose 320 times higher than levonantradol; cannabidiol was inactive at a dose 750 times higher. GABA like actions of levonantradol may be responsible for the antagonism of haloperidol, but anticholinergic effects may also contribute. 14 references. (Author abstract modified)

002787 Koide, T.; Matsushita, H. Dept. of Pharmacology, Research Labs. of Chugai Pharmaceutical Co. Ltd., No. 41-8, 3-chome, Takada, Toshima-ku, Tokyo, Japan **Influence of a chronic new potential antidepressant, 1-(3-(dimethylamino)propyl) 5-methyl-3-pheny1-1H-indazole (FS32) and its N-desmethylated compound (FS97): treatment on monoaminergic receptor sensitivity in the rat brain.** Neuropharmacology. 20(3):285-292, 1981.

The effects on male Sprague-Dawley rat brain monoaminergic receptor binding of the potential antidepressants 1-(3-(dimethylamino)propyl)-5-methyl-3-phenyl-1H-indazole (FS32) and its N-desmethylated compound (FS32) were compared with those of the classical tricyclic antidepressants, imipramine and desipramine. Single injections of these four drugs did not alter specific binding to beta-adrenergic, serotonergic, and dopaminergic receptors. Chronic treatment with each drug for 4 weeks significantly decreased specific binding to beta-adrenergic receptors and dopaminergic receptors, but not to serotonergic receptors. Results suggest that the beta-adrenergic and dopaminergic receptor subsensitivity induced by chronic treatment with FS32 or FS97 may play a role in their antidepressant actions. 48 references. (Author abstract modified)

002788 Koide, T.; Matsushita, H. Dept. of Pharmacology, Research Laboratories of Chugai Pharmaceutical Co., Ltd., No. 41-8, 3-chrome, Takada, Toshima-ku, Tokyo, Japan **An enhanced sensitivity of muscarinic cholinergic receptor associated with dopaminergic receptor subsensitivity after chronic antidepressant treatment.** Life Sciences. 28(10):1139-1145, 1981.

The chronic effects of antidepressant treatment of striatal dopaminergic (DA) and muscarinic cholinergic (mACh) receptors of the rat brain was examined comparatively using 3H-spiroperidol (3H-SPD) and 3H-quinuclidinyl benzilate (3H-QNB) as the radioactive ligands. Imipramine and desipramine were used as prototype antidepressants. Although a single administration of imipramine or desipramine did not affect each receptor sensitivity, chronic treatment with each drug caused a supersensitivity of mACh receptor subsequent to DA receptor subsensitivity. Furthermore, it has been suggested that anti-mACh properties of imipramine or desipramine may not necessarily be related to the manifestation of mACh receptor supersensitivity and that sustained DA receptor subsensitivity may play some role in the alterations of mACh receptor sensitivity. 39 references. (Author abstract)

002789 Kolbe, H.; Clow, A.; Jenner, P.; Marsden, C. D. Marsden: University Dept. of Neurology, Institute of Psychiatry, Denmark Hill, London SE5, England **Neuroleptic-induced acute dystonic reactions may be due to enhanced dopamine release on to supersensitive postsynaptic receptors.** Neurology. 31(4):434-439, 1981.

The temporal relationship between increased dopamine synthesis and release and the change in postsynaptic dopamine receptor sensitivity in rats given a single dose of the phenothiazine butaperazine was investigated. Oral administration of butaperazine (40mg/kg) to rats increased dopamine turnover, as measured by elevation of striatal and mesolimbic concentrations of homovanillic acid and 3,4-dihydroxyphenylacetic acid, for 24 to 48 hours. Initially, this dose of butaperazine inhibited stereotyped behavior in response to subcutaneous administration of apomorphine, but this effect was reversed at 12 hours. Later, animals had normal or exaggerated responses to apomorphine. The data suggest that at the critical 20 to 28 hour period after butaperazine administration, when most human dystonic reactions occur, normal or supersensitive cerebral dopamine receptors are exposed to an excessive synaptic release of dopamine. This may be responsible for the drug induced dystonia. 25 references. (Author abstract modified)

002790 Komissarov, I. V.; Abramets, I. I. Donetskiy gosudarstvennyy meditsinskiy institut im. A. M. Gor'kogo, Donetsk, USSR /**The effect of monoamines on motoneurons of the isolated rat spinal cord.**/ Vliyaniye monoaminov na motoneyrony izolirovannogo spinnogo mozga krysy. Neyrofiziologiya. 12(4):391-396, 1980.

The effect of monoamines on motoneurons of the isolated rat spinal cord was studied. Results show that superfusion of isolated hemisected rat spinal cord by a solution containing noradrenaline induces depolarization or hyperpolarization of motoneurons, depending on amine concentrations. Both effects are due to the direct influence of amine on motoneurons, since they remain in the medium with an abundance of Mg ions and a deficit of Ca ions. Both depolarization and hyperpolarization of moton-

eurons induced by noradrenaline are depressed by alpha-adrenoblockers. Depolarization of motoneurons induced by dopamine is suppressed in the medium with an abundance of Mg ions. Hyperpolarization of motoneurons induced by dopamine is suppressed by the addition of haloperidol, but remains unchanged when phentolamine is added. Depolarization of motoneurons induced by serotonin and its metabolites remains in the medium with an abundance of Mg ions and a deficit of Ca ions, and is depressed by methysergide and benanserin. 19 references. (Journal abstract modified)

002791 Kraus, Eric; Le Bars, Daniel; Besson, Jean-Marie. Le Bars: Unite de Recherche de Neurophysiologie Pharmacologique (U. 161), 2 rue d'Alesia, F-75014 Paris, France **Behavioral confirmation of controls" (DNIC) and evidence for a role of endogenous opiates.** Brain Research. 206(2):495-499, 1981.

To evaluate the behavioral significance of diffuse noxious inhibitory controls (DNIC) observed in electrophysiological studies, a behavioral paradigm was designed to determine: 1) whether painful visceral stimulation could mask a complex, centrally integrated response to a punctual noxious stimulus; and 2) whether such inhibition was reduced by moderate doses of naloxone. The vocalization threshold test was used to evaluate hypoalgesic effects of the electric stimulations. Behavioral reactions to the injection of phenylbenzoquinone (PBG) were variable, but a significant increase in vocalization threshold was seen in all Ss. Results show that a dull pain of visceral origin can block the behavioral response to punctual peripheral stimuli. It is contended that this paradigm offers a good experimental model for the phenomenon wherein suffering patients report an increased experimental pain threshold. The hypoalgesia induced by visceral pain is dose dependently antagonized by low dose naloxone, suggesting the involvement of endogenous opiates. 11 references.

002792 Krug, M.; Brodemann, R.; Ott, T. Institute of Pharmacology and Toxicology, Medical Academy, DDR-301 Magdeburg, East Germany **Identical responses of the two hippocampal theta generators to physiological and pharmacological activation.** Brain Research Bulletin. 6(1):5-11, 1981.

Bipolar EEG recordings in the CA1 and dentate gyrus of freely moving rats were examined during conditions of rhythmic slow activity (RSA or theta rhythm) generation by different manipulations. Quantitative EEG parameters of simultaneous records were compared and cross-correlation functions were calculated. Results indicate that even under different conditions of inducing RSA (Physiological activation or injection of arecoline and nicotine) yielding RSA with different frequency characteristics, the quantitative EEG parameters were similar in both recordings. In addition, a high degree of concordance of both EEG recordings was evidenced in the cross-correlation function. These observations are discussed in terms of a high degree of coupling between both RS generators. 21 references. (Author abstract modified)

002793 Krulik, R.; Farska, I.; Jindrova, O. Psychiatric Research Unit, Medical School, Charles University, Ke Karlovu 11, Prague 2, Czechoslovakia **Plasma imipramine levels and demethylase activity in the liver of stressed animals.** Neuropsychobiology. 7(1):12-16, 1981.

The extent to which drug levels and demethylation activity in the rat liver is influenced by stress was investigated. The steady-state values in Ss after a second 14 day period of daily subcutaneous administration of imipramine were the same as during the first period. Liver demethylation activity rose for up to 3 days and then returned to normal. The imipramine binding capacity of the serum brain myelin, synaptosomes and mitochondria did not alter after repeated administration, but a decrease was found in the red blood cells. Stress led to marked reduction of the plasma imipramine level, with a simultaneous increase in liver demethylase activity. Adrenalectomy caused a drop in demethylase activity, while stress had no effect either on these values or on imipramine levels. 8 references. (Author abstract modified)

002794 Kumazawa, T.; Tadaki, E.; Kim, K. Dept. of Physiology, Nagoya University School of Medicine, Showa-ku, Nagoya 466, Japan **Naloxone effects on the blood pressure response induced by thin-fiber muscular afferents.** Brain Research. 205(2):452-456, 1981.

Naloxone effects on the blood pressure level and on the blood pressure responses induced by thin fiber muscular afferent stimulation were studied in anesthetized, bilaterally vagotomized and carotid sinus nerve denervated dogs under artificial ventilation. Repetitive pulses of 8 Hz with various intensities were applied to the gastrocnemius nerve for 1 min while monitoring the compound action potentials. The mean arterial pressure significantly rose about 5 min after a naloxone injection. Compared with the reflexive response in the control period, the depressor effect significantly decreased and the pressor effect significantly increased for 30 min after the injection of naloxone. No correlation was found between naloxone effects on the blood pressure level and on the reflex response, indicating an involvement of different mechanisms with these naloxone effects. It is suggested that endogenous opiates might participate in the regulation of the blood pressure level, as well as of the blood pressure responses caused by thin fiber muscular afferents. 20 references. (Author abstract modified)

002795 Kupersmith, Mark J.; Lieberman, Abraham N. Dept. of Neurology, New York University Medical Center, 550 First Ave., New York, NY 10016 **The effect of specific brain lesions on the high affinity binding of GABA in the substantia nigra.** Brain Research. 194(2):536-539, 1980.

High affinity GABA binding to receptors in the substantia nigra of male Sprague-Dawley rats was studied 21 days after various lesions. Unilateral 6-hydroxydopamine lesions of nigra dopaminergic cells significantly reduced the density of GABA receptors, suggesting GABA receptors are located post synaptically on dopaminergic neurons in the substantia nigra. Electrocoagulation lesions of the globus pallidus did not alter the affinity or density of nigral GABA receptors, but lesions of the crus cerebri induced a two fold increase in the density of nigral GABA receptors. 19 references.

002796 Kuruvilla, Alice; Uretsky, Norman. Divison of Pharmacology, College of Pharmacy, Ohio State University, Columbus, OH 43210 **Interaction of chlordiazepoxide and sodium valproate in the nucleus accumbens of the rat.** Life Sciences. 28(4):393-399, 1981.

To determine whether benzodiazepines and sodium valproate interact functionally at GABA receptor sites, graded doses of chlordiazepoxide (CDZ) and sodium valproate were injected bilaterally into the nucleus accumbens and their effect on the dopamine (DA) induced stimulation of motor activity was studied. Both of these compounds, as well as GABA, produced an inhibition of the hyperactivity induced by the bilateral injection of DA into the nucleus accumbens. Bicuculline, the GABA receptor antagonist, blocked the effect of CDZ on the DA induced hyperactivity. A low dose of CDZ, which by itself did not significantly inhibit the effect of DA, potentiated the inhibition of the hyperactivity produced by valproate. These results suggest that CDZ and sodium valproate can interact functionally at GABAergic sites in the CNS. 12 references. (Author abstract modified)

002797 Lai, A. A.; Levy, R. H.; Martis, L. Levy: School of Pharmacy BG 20, University of Washington, Seattle, WA 98195 **Pharmacokinetic profile of valproic acid in rhesus monkeys following single bolus and constant rate intravenous administrations.** Therapie. 35(2):221-232, 1980.

The pharmacokinetic profile of valproic acid was studied. Six male rhesus monkeys received four intravenous bolus doses and later received single step and multistep constant rate intravenous infusion of the drug. Plasma levels were determined by gas liquid chromatography. A one compartment open model with first-order elimination was selected to describe the pharmacokinetics of valproic acid. Results show that the mean parameters from the intravenous bolus studies were: total body clearance, 0.20 liters/hr/kg; elimination half-life, 0.66 hr; and volume of distribution, 0.17 liter/kg. The constant infusion resulted in increases in volume of distribution and half-life. 17 references. (Author abstract modified)

002798 LaManna, Joseph C.; Harik, Sami I.; Light, Andrew I.; Rosenthal, Myron. Dept. of Neurology, University of Miami School of Medicine, Miami, FL 33101 **Norepinephrine depletion alters cerebral oxidative metabolism in the** Brain Research. 204(1):87-101, 1981.

Unilateral chemical lesion of the nucleus locus coeruleus in rats was found to produce unilateral depletion of ipsilateral cortical norepinephrine. Norepinephrine depletion was not associated with changes in resting metabolic balance of the cerebral cortex, as determined by in situ reflection spectrophotometry of the redox state of cytochrome oxidase. Norepinephrine depletion, however, caused slowing of the transient metabolic response to sudden increases in energy demand produced by direct cortical electrical stimulation. The effect was apparent in the redox state of both cytochrome oxidase and nicotinamide adenine dinucleotide, the latter being measured, also in situ, by reflection microfluoremetry. These results demonstrate that norepinephrine has a role in modulating the response to increased metabolic demand in the cerebral cortex. Norepinephrine may mediate its effect by potentiating Na, Kadenosine triphosphatase or through its effects on vascular reactivity. 40 references. (Author abstract modified)

002799 Lambert, J. D. C.; Flatman, J. A. Institute of Physiology, University of Aarhus, DK-8000 Arhus C, Denmark **The interaction between barbiturate anaesthetics and excitatory amino acid responses on cat spinal neurones.** Neuropharmacology. 20(3):227-240, 1981.

Pentobarbitone and thiopentone were injected i.v. or applied iontophoretically during intracellular recording from lumbar motoneurons in anemically decorticated cats. The most striking effect of the barbiturates was a marked reduction in the conductance increase seen during responses to glutamate. Responses to DL-homocysteate were also attenuated by the barbiturates, but no significant interference with conductance changes underlying the response was observed. Results are not consistent with three current theories of the mechanism of action of barbiturate anesthetics, and it is suggested that barbiturates exert their actions through a multitude of mechanisms. 39 references. (Author abstract modified)

002800 Lange, David G.; Roerig, Sandra C.; Fujimoto, James M.; Wang, Richard I. H. Fujimoto: Dept. of Pharmacology and Toxicology, Medical College of Wisconsin, P.O. Box 26509, Milwaukee, WI 53266 **Enhancement of etorphine brain concentrations and changes in etorphine-naloxone pA2 values in morphine-pretreated mice.** Biochemical Pharmacology. 30(2):147-155, 1981.

The enhancement of etorphine brain concentrations and changes in etorphine naloxone pA2 values in morphine pretreated mice were examined. Three hours after pretreatment with morphine, (3H)etorphine was administered subcutaneously, and its brain concentrations were determined as a function of time. Etorphine brain concentrations were higher in morphine pretreated than in saline pretreated animals at 5, 15, 20, and 30 min. This enhancement of brain concentrations was not associated with a change in the analgesic ED50 for etorphine. Morphine pretreatment decreased the etorphine naloxone apparent pA2 value in the direction opposite to that observed for the morphine/naloxone interaction. Results are discussed relative to a morphine induced change in the disposition of etorphine in the brain, or to a morphine induced alteration in morphine, etorphine, and naloxone interactions at agonist and antagonist binding sites. 35 references. (Author abstract modified)

002801 Langer, S. Z.; Dubocovich, M. L. Dept. of Biology Synthelabo (LERS), 58, rue de la Glaciere, F-75013 Paris, France **Cocaine and amphetamine antagonize the decrease of noradrenergic neurotransmission elicited by oxymetazoline but potentiate the inhibition by alpha-methylnorepinephrine in the perfused cat spleen.** Journal of Pharmacology and Experimental Therapeutics. 216(1):162-171, 1981.

Cocaine and amphetamine were found to antagonize the decrease of noradrenergic neurotransmission elicited by oxymetazoline but to potentiate the inhibition by alpha-methylnorepinephrine in the perfused cat spleen. It is noted that the failure of amphetamine to antagonize the inhibition of neurotransmission elicited by the activation of presynaptic dopamine or muscarinic receptors excludes the possibility that the antagonism by amphetamine of the inhibition elicited by oxymetazoline is of a nonspecific nature. Results suggest that differences may exist between the recognition site for catcholamines and for imidazolines at the level of the presynaptic alpha-2 adrenoceptor. It is concluded that the comparison of the order of potencies for imidazolines and phenylethylamines of presynaptic alpha-2 adrenoceptors when neuronal uptake of norepinephrine is inhibited by drugs may need extensive reevaluation. 64 references. (Author abstract modified)

002802 Lau, Christopher; Slotkin, Theodore A. Slotkin: Box 3813, Duke University Medical Center, Durham, NC 27710 **Maturation of sympathetic neurotransmission in the rat heart. VII. Suppression of sympathetic responses by dexamethasone.** Journal of Pharmacology and Experimental Therapeutics. 216(1):6-11, 1981.

The effects of dexamethasone on development of sympathetic nerve function in the heart were evaluated by giving 1mg/kg of dexamethasone s.c. daily for seveal days beginning the day after birth. Dexamethasone interfered with tyramine and isoproterenol induced tachycardia in the neonates but did not cause alterations in development of a marker for presynaptic sympathetic nerve terminals synaptic vesicle uptake of (3H) norepinephrine) nor of postsynatpic beta adrenoceptor binding of (3H)dihydroalprenolol; the deficit was also unrelated to general cellular effects of the hormone. These data suggest that the subnormal chronotropic responses of the heart to sympathetic stimulation in dexamethasone treated neonatal rats result from uncoupling of receptors from the organ response. The effects of dexamethasone on cardiac responses were specific to the neonate, as mature rats given dexamethasone did not show suppression of cardiac sympathetic action. Neonatal dexamethasone treatment also produced a deficit of adrenomedullary development with deficiencies in catecholamine levels and in catecholamine biosynthetic enzymes; deficits in phenylethanolamine N-methyltransferase activity persisted into young adulthood. 36 references. (Author abstract modified)

002803 Leff, Stuart; Adams, Lynne; Hyttel, John; Creese, Ian. Creese: Dept. of Neurosciences, M-008, School of Medicine, University of California, San Diego, La Jolla, CA 92093 **Kainate lesion dissociates striatal dopamine receptor radioligand binding sites.** European Journal of Pharmacology. 70(1):71-75, 1981.

Kainic acid lesions of rat striata reduced the specific dopamine receptor binding of the butyrophenone antagonist 3H-spiperone by 56% and of the butyrophenone like antagonist 3H-domperidone by 59%. High affinity binding of the agonist 3H-N-Propylnorapomorphine (3H-NPA) was reduced by 79% and that of the antagonist 3H-flupenthixol by 73%. Results indicate that 3H-spiperone and 3H-domperidone label dopamine receptors distinct from those labeled by 3H-flupenthixol and 3H-NPA. Data are consistent with the hypothesis that 3H-flupenthixol and 3H-NPA bind preferentially to adenylate linked D1-receptors. 24 references. (Author abstract modified)

002804 Leslie, F. M.; Dunlap, C. E., III; Cox, B. M. Addiction Research Foundation, Palo Alto, CA 94304 **Ascorbate decreases ligand binding to neurotransmitter receptors.** Journal of Neurochemistry. 34(1):219-221, 1980.

The effect of ascorbate on ligand binding to several neurotransmitter receptors in guinea-pig brain was examined. Opiate and clonidine binding sites were sensitive particularly to the destructive effects of ascorbate, but the densities of haloperidol and quinuclidinyl benzilate binding sites were reduced also. The receptor destruction induced by ascorbate was inhibited by ethylene-diaminetetraacetate, suggesting the involvement of ascorbate catalyzed lipid peroxidation. Results provide no evidence that neurotransmitter receptors are subject to ascorbate catalyzed destruction under physiological conditions, but the findings do indicate that ligand binding properties of neurotransmitter receptors are modified by exposure to ascorbate at concentrations frequently used in ligand binding studies. 15 references.

002805 Lewis, Darrell V., Jr. Division of Pediatric Neurology, Duke University Medical Center, Box 3533, Durham, NC 27710 **Diphenylhydantoin reduces the outward current of the action potential in Aplysia.** Brain Research. 207(1):234-238, 1981.

Diphenylhydantoin (DPH) has been shown to prolong the repolarization phase of action potentials in aplysia and to reduce the spike after hyperpolarization. Somata of aplysia giant neurons were voltage clamped and action potential currents were measured to determine what alterations might be responsible for the prolonged repolarization and reduced undershoot. DPH did not affect the peak inward current; however, it did reversibly reduce the outward current at concentrations of 38mcM or greater. The data indicate that DPH reduced the voltage sensitive potassium conductance rather than the A-current or the calcium activated potassium conductance. These changes in outward current would explain the prolonged action potentials and reduced after hypopolarization seen with DPH in aplysia. 14 references. (Author abstract modified)

002806 Lin, M. T.; Chandra, A.; Ko, W. C.; Chen, Y. M. Dept. of Physiology and Biophysics, National Defense Medical Center, Taipei, Taiwan **Serotonergic mechanisms of clonidine-induced hypothermia in rats.** Neuropharmacology. 20(1):15-21, 1981.

The effects of intraventricular administration of clonidine and serotonin on metabolic, respiratory, and vasomotor activities as well as on body temperature were assessed in unanesthetized rats at ambient temperatures of 8, 22, and 30 degrees C. Intraventricular administration of clonidine and serotonin each produced a dose dependent hypothermia at all temperatures studied. At 8 degrees and 22 degrees C, the hypothermia in response to clonidine and serotonin was due to decreased metabolic heat production, increased respiratory evaporative heat loss and cutaneous vasodilation. In the heat, the induced hypothermia was due to increased respiratory evaporative heat loss. The clonidine hypothermia was greatly antagonized by the pretreatment of animals with 5,7-dihydroxytryptamine, but not with 6-hydroxydopamine. The data indicate that clonodine may decrease heat production and (or) increase heat loss to elicit hypothermia, probably via activation of central serotonergic pathways. 24 references. (Author abstract modified)

002807 Lindvall, M.; Owman, C. Dept. of Histology, University of Lund, Biskopsgatan 5, S-223 62 Lund, Sweden **Evidence for the presence of two types of monoamine oxidase in rabbit choroid plexus and their role in breakdown of amines influencing cerebrospinal fluid formation.** Journal of Neurochemistry. 34(3):518-522, 1980.

The presence of monoamine oxidase (MAO) in the choroid plexus of rabbit brain ventricles was demonstrated radiometrically. Histochemical staining of MAO indicated the enzyme was located primarily in the secretory epithelium. Inhibition by clorgyline and deprenyl showed that type-A and type-B MAO were present in approximately equal proportions in the plexus. Intraventricular administration of nialamide markedly reduced cerebrospinal fluid (CSF) production and potentiated the reduction in CSF formation induced by intraventricular adminstration of noradrenaline. The nialamide effect was diminished after sympathetic denervation of the plexus, indicating that neuronal MAO is also present in the plexus. 20 references. (Author abstract modified)

002808 Lodge, D. Dept. of Pharmacology, Australian National University, Canberra, Australia **L-Histidine: effects on sensitivity of cat spinal neurones to amino acids.** Neuroscience Letters. 14:171-176, 1979.

Evidence is presented that L-histidine enhances the inhibitory actions of GABA, muscimol, and beta-alanine rather than that of glycine on spinal neurons in pentobarbitone anesthetized cats. L-histidine also enhanced the excitatory action of L-glutamate, D-aspartate, L-aspartate, L-homocysteate, and especially that of quisqualate. The actions of acetylcholine, kainate, N-methyl-D-aspartate, and D-homocysteate were more commonly reduced. These actions of L-histidine are best described to an effect on amino acid transport systems, probably of the low affinity type, which therefore appear to be partially responsible for the inactivation of exogenously administered amino acids. (Journal abstract)

002809 Loew, D. M. Preclinical Research, Pharmaceutical Division, Sandoz Ltd., Basel, Switzerland **Pharmacologic approaches to the treatment of senile dementia.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 287-294).

Pharmacological approaches to the treatment of senile dementia are examined, along with animal effects of three representative drugs (vincamine, piracetam, and co-dergocrine mesylate), and trends in gerontopsychopharmacological research. A review of the animal studies with the three drugs indicates that the pharmacological basis for their therapeutic effects involves influences on cerebral blood flow, brain cell metabolism, and synaptic transmission. Present research in animals and humans is moving away from investigations of vascular mechanisms and emphasizes drugs that interact with brain neurotransmission to mitigate the cognitive and emotional symptoms of senile mental deterioration. 63 references. (Author abstract modified)

002810 Login, Ivan S.; MacLeod, Robert M. Dept. of Neurology, University of Virginia School of Medicine, Charlottesville,

VA 22908 **The direct effect of reserpine in vitro on prolactin release from rat anterior pituitary glands.** Brain Research. 204(1):79-85, 1981.

The direct effect of reserpine in vitro on prolactin release from rat anterior pituitary glands was investigated. Anterior pituitary glands from normal untreated rats synthesize and release the hormone prolactin (Prl) during incubation under in vitro conditions. Addition of dopamine (DA) greatly inhibits the release of Prl and to a lesser extent reduces Prl synthesis. When pituitary glands are incubated in the presence of reserpine, there is a similar significant dose related inhibition of Prl release. This effect persists even in the presence of a DA antagonist (haloperidol) and after the depletion of hypothalamic amines by in vivo treatment with reserpine. Reserpine in vitro also inhibits release of newly synthesized growth hormone from the pituitary glands of male rats; however, this is not observed when female rats are studied. It is concluded that the direct effect of reserpine to inhibit Prl release is apparently independent of any interaction with catecholamine systems and is mediated by other, presently undefined mechanisms. 19 references. (Author abstract modified)

002811 Longshore, Margaret A.; Makman, Maynard H. Dept. of Biochemistry, Albert Einstein College of Medicine, 1300 Morris Park Ave., Bronx, NY 10461 **Stimulation of retinal adenylate cyclase by vasoactive intestinal peptide (VIP).** European Journal of Pharmacology. 70(2):237-240, 1981.

The effects of vasoactive intestinal peptide (VIP), secretin, and glucagon on retinal adenylate cyclase were studied in rabbit, rat, and calf retinas. Results revealed the presence of a highly active VIP sensitive adenylate cyclase in mammalian retina. The peptide effects were not enhanced by the guanine nucleotide analog 5'-guanylyl-imidodiphosphate. Glucagon and secretin also caused significant increases in retinal adenylate cyclase activity, but the magnitude of these effects was generally less that that of VIP. 10 references. (Author abstract modified)

002812 Lorez, Hanspeter. Pharma Research Dept., F. Hoffmann-La Roche and Co., Ltd., CH-4002 Basle, Switzerland **Fluorescence histochemistry indicates damage of striatal dopamine nerve terminals in rats after multiple doses of methamphetamine.** Life Sciences. 28(8):911-916, 1981.

The effects of methamphetamine on fluorescence histochemistry of dopamine nerve fibers in neostriatum, nucleus accumbens, tuberculum olfactorium and medial frontal cortex were investigated in rats treated every 6 hours for 24 hours and killed 6 and 11 days after treatment. In control rats, occasional nerve fibers (probably nerve terminals) in the neostriatum showed some distortion and a strong formaldehyde-glyoxylic acid induced catecholamine fluorescence; 6 and 11 days after methamphetamine, the number of swollen nerve fibers showing strong fluorescence in this region was significantly increased. In contrast, in nucleus accumbens, tuberculum olfactorium, and medial frontal cortex, such fiber swellings were virtually absent in both controls and methamphetamine treated rats. These findings indicate that multiple doses of methamphetamine might be toxic to neostriatal dopamine nerve fibers. 22 references. (Author abstract modified)

002813 Lyness, William H.; Mycek, Mary J. College of Medicine and Dentistry of New Jersey, New Jersey Medical School, Dept. of Pharmacology, 100 Bergen St., Newark, NJ 07103 **In vitro cellular adaptation of serotonergic processes after chronic central phenobarbital administration.** Brain Research. 204(1):248-252, 1981.

An attenuation of phenobarbital induced depression of potassium (K) stimulated (3H)serotonin (5-HT) release in brain slices from rats made tolerant to icv injected phenobarbital is reported. Uptake of (3H)5-HT was not influenced either by the tolerant state of the animal or by the presence of phenobarbital in the incubation medium. Although stimulation of (3H)5-HT release after K induced depolarization varied with the tissue, tolerance had no effect on the magnitude of this effect. Addition of phenobarbital to the medium reduced K stimulated amine release in a dose dependent manner. Tolerance was found to play a role in determining the extent to which exogenous phenobarbital depressed 5-HT release; in these instances, a parallel shift to the right of the dose response curve was observed. 14 references.

002814 Makman, Maynard H.; Dvorkin, B.; Horowitz, Sara G.; Thal, Leon J. Dept. of Biochemistry, Albert Einstein College of Medicine, Bronx, NY **Properties of dopamine agonist and antagonist binding sites in mammalian retina.** Brain Research. 194(2):403-418, 1980.

Stereospecific binding sites for the dopamine antagonist 3H-spiroperidol were found in retinal homogenates of calf, rat, rabbit, and Cebus appella and Macaca mulata monkeys. In additional studies of calf and rat retina, stereospecific binding sites were found for the dopamine agonist 3H-2-amino-6,7-dihydroxy-1,2,3,4-tetrahydronapththalene (3H-ADTN). The total number of 3H-ADTN sites in retina was at least twice that of 3H-spiroperidol sites. Guanine nucleotides reduced the affinity of ADTN for 3H-spiroperidol binding and also reduced the specific binding of 3H-ADTN itself. It is suggested that 3H-ADTN sites sensitive to guanine nucleotides may be related to guanine nucleotide sensitive 3H-spiroperidol sites as well as to adenylate cyclase. The 3H-ADTN sites that are not sensitive to guanine nucleotides may be presynaptic and are probably not coupled to adenylate cyclase. 28 references. (Author abstract modified)

002815 Marshall, John F. Department of Psychobiology, University of California, Irvine, CA 92717 **Basal ganglia dopaminergic control of sensorimotor functions related to motivated behavior.** In: Thompson, R., Neural mechanisms of goal-directed behavior & learning. New York, Academic Press, 1980. 639 p. (p. 167-176).

Research data, which indicate that dopamine (DA) containing neurons of the rat brain are critical to certain sensorimotor capacities, most notably to its ability to orient toward tactile, visual, and olfactory stimuli, are reviewed. The sensorimotor deficits of rats with damage to these neurons appears to contribute to the initial aphagia and may contribute as well to the later stages of the syndrome of ingestive deficits. The remarkable capacity of these rats to recover from sensorimotor deficits appears related to compensatory neurochemical events occurring at remaining dopaminergic synapses. First, administration of a DA receptor stimulant to animals with severe DA depletions can restore orientation capacities, suggesting that a restitution of DA receptor activity is sufficient for behavioral recovery to occur. Second, administration of drugs that interfere with DA neurotransmission to animals that have spontaneously recovered from their somatosensory inattention reinstates sensorimotor dysfunction, suggesting that a restitution of DA receptor activation may be necessary for behavioral recovery. 23 references.

002816 Martinet, Michel; Fonlupt, Pierre; Pacheco, Henri. Institut National des Sciences Appliquees, Service de Chimie Biologique, Bat. 406, 20 Avenue Einstein, F-69621 Villeurbanne cedex, France **Activation of soluble striatal tyrosine hydroxylase in the rat brain after CDPcholine administration.** Biochemical Pharmacology. 30(5):539-541, 1981.

The in vivo and in vitro effects of the antiparkinsonian drug, cytidine 5'diphosphorylcholine (CDPcholine), on the activity of

tyrosine hydroxylase, the rate limiting enzyme in the synthesis of catecholamines, in rat brain were investigated. CDPcholine was unable to modify tyrosine hydroxylase activity when added in vitro at different concentrations. A single injection of CDPcholine in vivo caused striatal tyrosine hydroxylase activity to increase by 12%, 24%, and 25% after 30, 60, and 120 minutes. The high DMPH4 level used could suppress CDPcholine alteration induced in vitro; however, this does not occur after CDPcholine administration with the same DMPH4 level. Thus, the hypothesized in vitro activation by CDPcholine seems doubtful. Two types of action of CDPcholine are proposed: 1) disinhibition of striatal tyrosine hydroxylase due to increased release and inhibited reuptake of dopamine; and 2) activation of striatal tyrosine hydroxylase by inducing an active physical form. The pharmacological impact could be participation in lipid metabolism. 13 references.

002817 Marton, J.; Molnar, J.; Koves, K.; Halasz, B. Second Dept. of Anatomy, Semmelweis University Medical School, P.O.B. 95, H-1094 Budapest, Hungary **Naloxone reversal of the pentobarbital induced blockade of ovulation in the rat.** Life Sciences. 28(7):737-743, 1981.

The effect of naloxone, an opiate antagonist, on the pentobarbital induced suppression of gonadotrophin secretion and subsequent ovulation was studied. Two injections of naloxone, the first at 13:00 hours and the second, given simultaneously with an ovulatory blocking dose of pentobarbital at 13:30 hours, partially reversed the inhibitory effect of the barbiturate. However, if the first injection of naloxone was given with pentobarbital at 13:30 hours and a second at 14:30 hours, then the opioid antagonist had no such effect. Naloxone administered alone enhanced gonadotrophin secretion and increased the number of ova shed. These findings support the view that endogenous opioids may exert an inhibitory influence on central neural processes involved with ovulation. 27 references. (Author abstract modified)

002818 Mayer, M. L. Dept. of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX 77550 **A barbiturate evoked intensification of postsynaptic inhibition in the preoptic ovulatory trigger region of the hypothalamus.** Brain Research. 207(1):229-233, 1981.

A barbiturate evoked intensification of postsynaptic inhibition in the preoptic ovulatory trigger region of the hypothalamus is described. Extracellular single unit recordings were used to study inhibitory synaptic responses evoked from preoptic/anterior hypothalamic neurons following arcuate/ventromedial stimulation. Intravenously administered methohexitone, pentobarbitone and thiopentone increased the duration of inhibitory synaptic responses by up to 400%. Submaximal response to iontophoretically applied GABA but no glycine were also potentiated. Recovery from the actions of the short acting barbiturates was observed. 20 references. (Author abstract modified)

002819 Mazzari, S.; Massotti, M.; Guidotti, A.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeth's Hospital, Washington, DC 20032 **GABA receptors as supramolecular units.** Advances in Biochemical Psychopharmacology. 26:1-8, 1981.

A model of the GABA receptor as a supramolecular unit is presented, and procedures whereby the GABA recognition protein and GABA-modulin can be isolated, stabilized, and purified are discussed. Preliminary recombination experiments show that the GABA-modulin inhibits the binding of GABA to the fluidified GABA recognition sites. Since the fluidified GABA recognition site does not bind benzodiazepines and since benzodiazepines added to the fluidified GABA recognition protein fail to modify the binding of GABA, it is suggested that the benzodiazepine binding protein is not the protein that recognizes GABA. Since activation of the benzodiazepine recognition protein modifies GABA receptor function and since this differs from the protein which contains the GABA recognition site, it can be inferred that the GABA receptor includes at least four proteins: GABA-modulin, the protein that contains the GABA recognition site, the protein that contains benzodiazepine recognition sites, and the Cl- ion channel. 18 references. (Author abstract modified)

002820 McCarthy, Ken D.; Harden, T. Kendall. Harden: Dept. of Pharmacology, University of North Carolina School of Medicine, Chapel Hill, NC 27514 **Identification of two benzodiazepine binding sites on cells cultured from rat cerebral cortex.** Journal of Pharmacology and Experimental Therapeutics. 216(1):183-191, 1981.

THe identification of two benzodiazepine binding sites on cells cultured from rat cerebral cortex is described. Cultures containing either glia alone, predominately neurons alone or neurons and glia were prepared from perinatal rat cerebral cortex. Cells in these cultures exhibited both a high and a low affinity binding site for (3H)flunitrazepam. The pharmacological properties of this low affinity binding site were markedly different from the binding site present on neurons but similar to those of a binding site on C6 rat glioma cells. The high affinity binding site appeared to be restricted to neuronal elements in these cultures. 31 references. (Author abstract modified)

002821 McConnell, Susan K.; Baum, Michael J.; Badger, Thomas M. Baum: Massachusetts Institute of Technology, 37-331, Cambridge, MA 02139 **Lack of correlation between naloxone-induced changes in sexual behavior and serum LH in male rats.** Hormones and Behavior. 15(1):16-35, 1981.

Four experiments were conducted to determine whether the action of opiate receptor antagonist drugs on sexual performance in male rats is mediated by the central release of luteinizing hormone releasing hormone (LHRH). In Experiment 1 it was demonstrated that the administration of naloxone caused a lengthening of postejaculatory intervals and an elevation of serum luteinizing hormone (LH) concentrations in gonadally intact male rats. In Experiment 2 manipulation of females' proceptive and receptive behaviors failed to reveal the reductions in ejaculation latencies and reductions in the number of intromissions preceding ejaculation which have been reported previously, after administration of naloxone to male rats. In Experiment 3 pinching the tails every 30 sec after ejaculation partially abolished the relative refractory periods of the postejaculatory intervals. In Experiment 4 naloxone was given to castrated males implanted with testosterone filled silastic capsules which produced a wide range of basal serum LH concentrations. Naloxone caused an increase in postejaculatory intervals. However, this effect was not correlated with the degree to which naloxone stimulated serum LH, suggesting that the effects of naloxone on the postejaculatory interval are not mediated by a drug induced release of LHRH. 35 references. (Author abstract modified)

002822 McDougal, J. N.; Marques, P. R.; Burks, T. F. Dept. of Pharmacology, Arizona Health Sciences Center, Tucson, AZ 85724 **Reduced tolerance to morphine thermoregulatory effects in senescent rats.** Life Sciences. 28(2):137-145, 1981.

Age related differences in thermoregulatory responses to acute or chronic morphine administration were investigated. Precipitated withdrawal was also analyzed by inducing withdrawal with naloxone in morphine pellet implanted rats. Senescent (26-month-old or 27-month-old), mature (10-month-old or 11-month-old), and young (3-month-old or 4-month-old) male

Fischer 344 rats were restrained and changes in rectal temperature were monitored for six hours after morphine administration. Results indicate that older rats are more resistant to the acquisition of tolerance to the thermic effect of morphine; however, with continued morphine treatment, rats become tolerant, regardless of age. 21 references. (Author abstract modified)

002823 McGaugh, James L.; Martinez, Joe L., Jr.; Jensen, Robert A.; Messing, Rita B.; Vasquez, Beatriz, J. Department of Psychobiology, University of California, Irvine, CA 92717 **Central and peripheral catecholamine function in learning and memory processes.** In: Thompson, R., Neural mechanisms of goal-directed behavior & learning. New York, Academic Press, 1980. 639 p. (p. 75-91).

Research data on animals are presented to show that retention of newly learned responses is influenced by peptide hormones, catecholamines, and drugs that affect hormone and catecholamine metabolism. These findings provide support for the view that processes associated with affective states modulate memory storage. The role of peripheral hormonal systems in the modulation of memory storage is emphasized. The finding that memory is influenced by experimentally induced alterations in peripheral hormonal systems emphasizes the possibility that learning normally involves the release of peripheral hormones that then influence brain processes involved in memory storage. Such a view does not assume that learning requires such feedback. Rather, it seems that the feedback does occur and that involvement of peripheral hormonal systems may be important for regulating the degree or strength of retention of recent experiences. Viewed in this way, the importance of an experience may be defined by its consequences for peripheral hormonal systems. 27 references.

002824 McGeer, P. L.; McGeer, E. G.; Innanen, V. T. Kinsmen Lab. of Neurological Research, Dept. of Psychiatry, University of British Columbia, Vancouver, British Columbia, Canada V6T 1W5 **Kainic acid and neurotransmitter interactions in the basal ganglia.** Advances in Biochemical Psychopharmacology. 24:185-191, 1980.

Studies of kainic acid (KA) and neurotransmitter interactions in the rat basal ganglia are described. It is noted that KA is a unique tool for neuroscientists, and has been used widely to resolve disputes as to which type of structure is involved in various neurochemical or behavioral effects of electrolytic lesions and in localizing various biochemical markers to specific types of structures within the lesion area. Studies of KA and 6-hydroxydopamine, a selective toxin for dopaminergic neurons have demonstrated the apparent presence of heterologous neurotransmitter receptor sites on nerve endings and thus indicated the possibility of dendro/axonic transmission in the nervous system. It is noted if dendro/axonic transmission is a general phenomenon in CNS, then there are important implications for development of neuroleptics and other pharmacological agents for clinical use. 27 references.

002825 McSwigan, John D.; Nicol, Susan E.; Gottesman, I. I.; Tuason, V. B.; Frey, William H., II. Frey: Dept. of Psychiatry, Research Unit, St. Paul-Ramsey Medical Center, St. Paul, MN 55101 **Effect of dopamine on activation of rat striatal adenylate cyclase by free Mg2 and guanyl nucleotides.** Journal of Neurochemistry. 34(3):594-601, 1980.

Stimulation of male Sprague-Dawley rat striatal adenylate cyclase by guanyl nucleotides was examined, using magnesium adenosine triphosphate or magnesium 5'-adenylylimidodiphosphate as substrate. Guanosine triphosphate (GTP) and 5'-guanylylimidodiphosphate stimulated adenylate cyclase under conditions in which the guanyl nucleotide was not degraded. The apparent stimulation of adenylate cyclase by guanosine diphosphate (GDP) was due to an ATP dependent transphosphorylase in the tissue that converts GDP to GTP. These findings indicate that GTP is the physiological guanyl nucleotide responsible for stimulation of striatal adenylate cyclase. Dopamine appeared to stimulate striatal adenylate cyclase by increasing the affinity for free magnesium ion and guanyl nucleotide and by increasing maximal velocity. The effect of dopamine was blocked by the antipsychotic drug fluphenazine. 45 references. (Author abstract modified)

002826 Meldrum, Brian. Dept. of Neurology, Institute of Psychiatry, London SE5 8AF, England **GABA-agonists as anti-epileptic agents.** Advances in Biochemical Psychopharmacology. 26:207-217, 1981.

Studies of the anticonvulsant action of GABA agonists are reviewed, and the paradoxical epileptogenic action of classical GABA agonists (i.e., those acting on postsynaptic inhibition that is bicuculline sensitive and strychnine insensitive) is discussed. The issue of whether this effect is due to action on other GABA receptors or is a consequence of diffuse action on classical GABA receptor sites is evaluated. Results indicate that GABA agonists appear to be anticonvulsant in some rodent test systems, but are epileptogenic rather than anticonvulsant in a primate model of epilepsy. 33 references.

002827 Meldrum, M. J.; Isom, G. E. Dept. of Pharmacology, College of Pharmacy, Ohio State University, Columbus, OH 43210 **Role of monoaminergic systems in morphine-induced respiratory depression.** Neuropharmacology. 20(2):169-175, 1981.

Morphine sulfate (80mg/kg) induced respiratory depression in Sprague-Dawley rats was accompanied by an increase in 5-hydroxytryptamine (5-HT) and a decrease in norepinephrine (NE) in the medulla/pons area. The morphine induced respiratory depression was potentiated by pretreatment with drugs that increase 5-HT levels and was antagonized by pretreatments that increase NE levels. It is suggested that 5-HT functions as a depressant mediator and NE as an excitatory mediator in morphine induced respiratory depression. Naloxone appears to reverse the respiratory depression by altering the serotonergic component of the action of morphine. 34 references. (Author abstract modified)

002828 Memo, M.; Riccardi, F.; Trabucchi, M.; Spano, P. F. Institute of Pharmacology, University of Cagliari, Cagliari, Italy **Localization of GABA and dopamine receptor sites in retinal glial cells using DL-alpha-aminoadipic acid.** Advances in Biochemical Psychopharmacology. 26:41-51, 1981.

Studies of the localization of GABA and dopamine receptor sites in retinal glial cells using DL-alpha-aminoadipic acid (AA) are described. Topics discussed include the: gliotoxic action of AA; action of AA on marker enzymes for neurons and glial cells; action of AA on GABA receptor binding; action of AA on dopamine receptor binding; and the action of kainic acid on GABA and dopamine receptor binding. Results agree with the interpretation that the action of AA ultimately elicits a denaturation of GABA and dopamine receptor proteins present on the membrane of retinal glial cells. It is suggested that a substantial portion of dopamine receptors in the retina are not functionally linked to adenylyl cyclase activity (D2-type). 29 references.

002829 Minneman, Kenneth P.; Pittman, Randall N.; Molinoff, Perry B. Dept. of Pharmacology, University of Colorado Health Sciences Center, Denver, CO 80262 **Beta-adrenergic receptor subtypes: properties, distribution, and regulation.** Annual Review of Neuroscience. 4:419-461, 1981.

The properties, cellular localization, and regulation of beta-adrenergic receptor sybtypes are reviewed. Data obtained in studies with intact animals and isolated organs and with radioligand binding assays are considered. Changes in cortical and cerebellar beta-adrenergic receptors during development and aging are described. 182 references.

002830 Mon, Manuel J.; Haas, Ali E.; Stein, Janet L.; Stein, Gary S. G. Stein: Dept. of Biochemistry and Molecular Biology, University of Florida College of Medicine, Gainesville, FL 32610 **Influence of psychoactive and nonpsychoactive cannabinoids on cell proliferation and macromolecular biosynthesis in human cells.** Biochemical Pharmacology. 30(1):31-43, 1981.

The influennce of psychoactive cannabinoids delta9-tetrahydrocannabinol (delta9-THC), delta8-THC, and 11-OH-delta9-THC) and nonpsychoactive cannabinoids (cannabinol) on proliferation of human cells (HeLa S3 cells grown in suspension culture) and on biochemical events associated with the proliferative process were examined. The four cannabinoids studied brought about a dose dependent inhibition in cell growth. Pulse labeling studies indicate a cannabinoid induced decrease in incorporation of (3H)thymidine, (3H)uridine, and (3H)leucine into DNA, RNA, and protein, respectively, in intact cells; in most cases, a comparable decrease in the acid soluble intracellular precursor pools was observed. Results from in vitro nuclear and chromatin transcription experiments do not suggest a drug induced change in RNA synthesis. It appears, therefore, that quantitative alterations in the synthesis and/or turnover of nucleic acids and proteins do not result from cannabinoid treatment of HeLa cells. 48 references. (Author abstract modified)

002831 Mon, Manuel J.; Haas, Ali E.; Stein, Janet L.; Stein, Gary S. G. Stein: Dept. of Biochemistry and Molecular Biology, University of Florida College of Medicine, Gainesville, FL 32610 **Influence of psychoactive and nonpsychoactive cannabinoids on chromatin structure and function in human cells.** Biochemical Pharmacology. 30(1):45-58, 1981.

The influences of two naturally occurring psychoactive cannabinoids (delta9-tetrahydrocannabinol (THC) and delta8-THC), of a psychoactive cannabinoid metabolite (11-OH-delta9-THC), and of a nonpsychoactive cannabinoid (cannabinol) on the composition, metabolism, and structure of human (HeLa cell) chromatin were examined. The effects of all four cannabinoids on the composition and synthesis of chromosomal proteins were studied by pulse labeling with (3H)leucine. The relative amounts of both histones and nonhistone chromosomal proteins remained unaffected, but a decrease in (3H)leucine incorporation into both histones and nonhistone proteins was observed. Posttranslational acetylation and phosphorylation of chromosomal proteins were studied in cannabinoid treated cells by pulse labeling with (3H)acetate and (32P). Variations were observed in (3H)acetate incorporation into histones and (32P) incorporation into both histones and nonhistone chromosomal proteins. Pancreatic DNase I digestion of chromatin from cannabinoid treated HeLa cells failed to demonstrate any drug induced alteration in DNA/protein interactions. 54 references. (Author abstract)

002832 Mos, Jan; Broxterman, Henk J.; Van Bennekom, Wouter P. Dept. of Pharmacology, Sylvius Laboratories, Wassenaarseweg 72, NL-2333 AL Leiden, The Netherlands **In vivo voltammetric investigations into the action of HA-966 on central dopaminergic neurons.** Brain Research. 207(2):465-470, 1981.

In vivo voltammetric investigations of the action of HA-966, an agent known to depress the firing rate of central dopaminergic nerve cells, on central dopaminergic neurons are described. Simultaneously, levels of the drug itself were detected in the striatum. Injection of HA-966 resulted in a decrease in the oxidation current Iox at 0.3V and the appearance of a new oxidation peak at about 0.9V. The decrease in Iox can be ascribed to a decrease of the extracellular dopamine (DA) concentration, owing to a blockade of overall DA release. Since HA-966 does not affect 5-hydroxytryptamine (5-HT) levels nor noradrenaline (NA) levels in the striatum, it is unlikely that changes in the release of these transmitters should be involved in the decrease of Iox. Results indicate that some HA-966 is transported into the brain. 16 references. (Author abstract modified)

002833 Muller, Walter E. Pharmakologisches Institut, Universitat Mainz, Obere Zahlbacher Strasse 67, D-6500 Mainz, West Germany **The benzodiazepine receptor: an update.** Pharmacology. 22(3):153-161, 1981.

Recent research on the brain specific binding sites of benzodiazepines is reviewed. Biochemical and pharmacological data indicate that benzodiazepine receptors are the endogenous targets that mediate the pharmacological effects of benzodiazepines. Considerable evidence indicates that the benzodiazepine receptor serves as an amplifying system for GABA mediated transmission by increasing the affinity of the GABA receptor. The endogenous ligand of the benzodiazepine receptor has not yet been identified. 63 references. (Author abstract modified)

002834 Muraki, T.; Tokunaga, Y.; Nakadate, T.; Kato, R. Dept. of Pharmacology, School of Medicine, Keio University, 35 Shinanomachi, Shinjuku-ku, Tokyo 160, Japan **Increase in plasma cyclic AMP levels elicted by naloxone in morphine-dependent male mice.** Neuropharmacology. 20(2):177-181, 1981.

Naloxone increased the levels of plasma cyclic AMP in morphine dependent male ddY mice, but not in controls. The effect of naloxone was inhibited by pretreatment with propranolol, hexamethonium, or adrenalectomy, but not by atropine or phentolamine. Results suggest that naloxone increases the level of plasma cyclic AMP by releasing catecholamines from the adrenal medulla, thereby activating adenylate cyclase in the tissues through stimulation of beta-adrenergic receptors. It is suggested that the increase in plasma cyclic AMP may be used as an index of the severity of withdrawal symptoms and degree of physical dependence in laboratory animals treated with morphine like drugs. 15 references. (Author abstract modified)

002835 Murphy, Kenneth M. M.; Snyder, Solomon H. Dept. of Neuroscience, Johns Hopkins University School of Medicine, 725 N. Wolfe St., Baltimore, MD 21205 **Adenosine receptors in rat testes: labeling with 3H-cyclohexyladenosine.** Life Sciences. 28(8):917-920, 1981.

Adenosine receptors in rat tissues were labelled with 3H-N6-cyclohexyladenosine (3H-CHA) and the distribution and drug specificity of these binding sites throughout the body were evaluated. Detectable receptor concentrations are restricted to the brain and testes. The brain displays receptor levels of 9 pmoles/g wet weight of tissue while the testes display 2 pmoles/g, with all other tissues examined showing less than detectable specific binding of 3H-CHA. The receptors in these two tissues appear to possess identical pharmacologic profiles with an A1 specificity for both. No change in the total number of 3H-CHA binding sites is seen in testes of rats which had been hypophysectomized 14 days prior to sacrifice. This may exclude the Leydig cells as a source of adenosine receptors in the rat testes. 12 references. (Author abstract modified)

002836 Nadi, N. S.; Hirsch, J. D.; Margolis, F. L. Margolis: Roche Institute of Molecular Biology, Dept. of Physiological Chemistry and Pharmacology, Nutley, NJ 07110 **Laminar distribution of putative neurotransmitter amino acids and ligand bind-**

ing sites in the dog olfactory bulb. Journal of Neurochemistry. 34(1):138-146, 1980.

The laminar distribution of 10 amino acids, the dipeptide carnosine, and 9 (3H)ligand binding sites in four anatomically distinct layers of coronal sections of frozen dog olfactory bulb were determined. GABA and tyrosine levels were highest in the mitral cell/granule cell layer, and glutamate levels were slightly elevated in the glomerular layer. The distributions of other amino acids did not show significant differences across layers. Muscimol, diazepam, kainic acid, and spiroperidol binding were predominantly localized in the mitral cell/granule cell layer, where clonidine binding was at a minimum. Dihydromorphine binding was high in both the fiber and mitral cell/granule cell layers. Carnosine binding was maximal in the glomerular layer. 44 references. (Author abstract modified)

002837 Nakahama, Hiroshi; Shima, Keisetsu; Aya, Kojiro; Kisara, Kensuke; Sakurada, Shinobu. Div. of Neurophysiology, Institute of Brain Diseases, Tohoku University School of Medicine, 1-1 Seiryo-Cho, Sendai, Japan **Antinociceptive action of morphine and pentazocine on unit activity in the nucleus centralis lateralis, nucleus ventralis lateralis and nearby structures of the cat.** Pain. 10(1):47-56, 1981.

Single neuronal activity was recorded extracellularly from the nucleus centralis lateralis (CL), ventralis lateralis (VL), and medialis dorsalis (MD) of the cat thalamus. The majority of the CL, VL, and MD neurons were excited by nociceptive stimulation such as pinching the skin with serrated forceps and/or intraarterial injection of bradykinin. The nociceptive neurons were driven also by nonnociceptive stimulation such as tap of deep tissues, bending hairs with an air puff and/or joint rotation, and their receptive fields were large. After intravenous administration of either morphine or pentazocine, most nociceptive neurons became unresponsive to nociceptive stimuli, although they were driven by nonnociceptive stimuli. It is suggested that morphine and pentazocine have a specific antinociceptive action on these nociceptive neurons. Intravenous naloxone reversed the antinociceptive action of morphine, but failed to reduce the action of pentazocine. It is maintained that this differentiation has an important functional significance. 38 references. (Author abstract)

002838 Nathanson, James A.; Redmond, D. Eugene, Jr. Dept. of Neurology, Harvard Medical School, Massachusetts General Hospital, Boston, MA 02114 **Morphine withdrawal causes subsensitivity of adrenergic receptor response.** Life Sciences. 28(12):1353-1360, 1981.

To determine whether the hyperactivity of noradrenergic neurons that occurs during opiate withdrawal might be associated with a reciprocal alteration in noradrenergic receptor response, isoproterenol stimulated adenylate cyclase activity was examined in the cerebella of morphine addicted monkeys at two time periods: 1) prior to withdrawal; and 2) during late withdrawal. Compared to control Ss, the chronically addicted group showed a significant increase in maximal enzyme velocity, a finding consistent with the observed hypoactivity of noradrenergic neurons which occurs during opiate administration. In contrast, the morphine withdrawal group demonstrated a significant decrease in enzyme activity. Piperoxan, known to mimic the effects of withdrawal in causing noradrenergic hyperactivity, also decreased enzyme activity. In no group was there a change in Ka for isoproterenol. These findings, indicating that opiate withdrawal is associated with a subsensitivity of noradrenergic receptor response, suggest a possible etiology for certain of the physiological changes of noradrenergic hypoactivity seen during the secondary (or protracted) abstinence syndrome. 44 references. (Author abstract)

002839 Neethling, Andries C.; McCarthy, Brian W.; Taljaard, Joshua J. F. MRC Neurochemistry Research Group, Dept. of Chemical Pathology, University of Stellenbosch, P. O. Box 63, Tygerberg 7505, South Africa **Characterization and quantitation of alpha-adrenergic receptor subtypes in rat hypothalamus.** Biochemical Pharmacology. 30(6):565-569, 1981.

The binding of (3H)dihydroergocryptine ((3H)DHE) to rat hypothalmic membranes was examined. Displacement of (3H)DHE by 100nM phentolamine, prazosine, and clonidine was used to assay for total alpha-adrenergic, alpha-1 adrenergic, and alpha-2 adrenergic receptor sites respectively. The alpha-1 adrenergic receptor content of the hypothalmus is 4.1pmoles/g tissue whereas the alpha-2 level is 6.5pmoles/g tissue. (3H)WB 4101 (alpha-1 selective) and (3H)clonidine (alpha-2 selective) binding yielded similar levels of 3.2 and 5.8pmoles/g tissue. It is concluded that (3H)DHE is a suitable ligand for the assay of alpha-adrenergic receptor subtypes under the conditions determined in this study. 20 references. (Author abstract)

002840 Nestoros, Joannis N. McGill University (Canada) **Anti-anxiety agents and synaptic transmission in the brain: electrophysiological studies. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):2916-B, 1981. (Not available from Univ. Microfilms), 1980.

The effects of antianxiety agents on the inhibitory effects of iontophoretically applied GABA and electrically evoked inhibition in the cerebral cortex of the cat were examined. Flurazepam and ethanol potentiated the inhibitory effects. The degree of potentiation produced by five benzodiazepines correlated with their relative affinities for the benzodiazepine receptor when all five drugs were applied with equal iontophoretic doses, and was not significantly different from one drug to another when the benzodiazepines were applied in doses inversely proportional to their relative affinities for the benzodiazepine receptor. Iontophoretically applied flurazepam consistently potentiated the conductance increase produced by iontophoretically applied GABA in CA1 and CA3 pyramidal neurons in rat hippocampus. It is concluded that GABAergic neurotransmission has a special role in the neurophysiology of anxiety. Since anxiety is involved in the etiology of alcoholism, and since chronic ethanol intake decreases GABA levels and alters the density of GABA receptors, the findings are consistent with the hypothesis that GABAergic mechanisms may be involved in the etiology of alcoholism. (Journal abstract modified)

002841 Nistri, A. Dept. of Pharmacology, St. Bartholomew's Hospital Medical College, Charterhouse Square, London EC1M 6BQ, England **Excitatory and inhibitory actions of ibotenic acid on frog spinal motoneurones in vitro.** Brain Research. 208(2):397-408, 1981.

Ibotenic acid (IBO), a conformationally restricted analogue of the putative excitatory transmitter glutamate, was found to produce biphasic effects on frog spinal motoneurons recorded with DC coupled Ag/AgCl electrodes placed on the central end of ventral roots. The initial effect consisted of a motoneuronal depolarization with an increase in exitability tested with low intensity dorsal root stimulation (the depolarizing activity of IBO was about six times greater than that of glutamate). On washout, the depolarizing effect of IBO subsided and complete motoneuronal repolarization occurred; however, motoneuronal responses to glutamate and to transsynaptic stimulation remained depressed for prolonged periods. This depressant effect was not reproduced following prolonged administrations of depolarizing doses of glutamate but it was similar to that produced by muscimol, an agonist on inhibitory GABA receptors. Unlike the muscimol evoked depression, the IBO induced depression was insensitive to bicuculline and was antagonized by local anesthetics or

high Mg2 solutions. It is suggested that a substantial part of the IBO depressant action is likely due to release of long acting inhibitory transmitters onto motoneurons. 21 references. (Author abstract)

002842 Nock, Bruce; Blaustein, Jeffrey D.; Feder, Harvey H. Institute of Animal Behavior, Rutgers University, Newark, NJ 07102 **Changes in noradrenergic transmission alter the concentration of cytoplasmic progestin receptors in hypothalamus.** Brain Research. 207(2):371-396, 1981.

A series of experiments designed to determine whether drug induced changes in NA transmission affect lordosis behavior of female guinea-pigs by altering steroid action within hypothalamic target cells is described. The effects of the dopamine-beta-hydroxylase inhibitor, U-14,624, on cytoplasmic progestin receptors in hypothalamus, preoptic area, cerebral cortex, and midbrain of estradiol benzoate primed females were examined. Results support the notion that the modulation of target tissue responsiveness to steriods is an important mechanism by which neurotransmitters affect steroid dependent processes. The operation of such a mechanisms would provide a rapid means by which environmental, behavioral, and emotional events could modulate steroid dependent behaviors and anterior pituitary function. 61 references. (Author abstract modified)

002843 Norris, P. J.; Smith, C. C. T.; De Belleroche, J.; Bradford, H. F.; Mantle, P. G.; Thomas, A. J.; Penny, R. H. C. Bradford: Dept. of Biochemistry, Imperial College of Science, London SW7 2AZ, England **Actions of tremorgenic fungal toxins on neurotransmitter release.** Journal of Neurochemistry. 34(1):33-42, 1980.

The neurochemical effects of the tremorgenic mycotoxins Verruculogen and Penitrem-A were studied in sheep and rat synaptosomes. The toxins were administered by chronic feeding to sheep and by i.p. injection to rats, and synaptosomes were prepared from cerebrocortical and spinal cord/medullary regions of rat and corpus striatum of sheep. Results indicated that both toxins interfere with amino acid neurotransmitter release mechanisms. Penitrem-A enhanced spontaneous release of glutamate, aspartate, and GABA, but reduced stimulus evoked release of these amino acids. Verruculogen enhanced spontaneous release of glutamate and aspartate from cortical synaptosomes without altering release induced by veratrine. 19 references. (Author abstract modified)

002844 Oana, Yasunori; Arai, Motoo; Miura, Shiroe. Dept. of Psychiatry, Tokyo Medical College, Tokyo, Japan **A study on effects of antiepileptic drugs upon the hippocampal afterdischarge.** Psychiatria et Neurologia Japonica. 82(1):48-66, 1980.

The effects of the four anticonvulsants phenobarbital, phenytoin, trimethadione, and carbamazepine on the hoppocampal afterdischarge were studied. Ss were 16 cats with electrodes chronically implanted by a constant current simulator. The five categories focused on include: threshold; duration; wave patterns of hippocampal after discharge; behavioral reaction; and generalized convulsions. With the exception of trimethadione, all the anticonvulsants had a similar effect on the hippocampal afterdischarge: lowering the threshold, shortening the duration, lowering spike voltage, suppressing the behavioral reaction, and suppressing convulsions. It is concluded that the main action of the anticonvulsants was not only the suppression of seizure discharge, but also the suppression of seizure discharge propagation from various areas of the brain to the peripheral motor system. 45 references. (Author abstract modified)

002845 Ohmiya, Yoshio; Mehendale, Harihara M. Mehendale: Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 North State St., Jackson, MS 39216 **Pulmonary metabolism of imipramine in the rat and rabbit: comparison with hepatic metabolism.** Pharmacology. 22(3):172-182, 1981.

The pulmonary metabolism of imipramine (IMP) was studied in male Sprague-Dawley rats and New Zealand white rabbits. The IMP metabolizing activity of rat lung was considerably greater than that of rabbit lung. The major metabolite produced by rat lung was IMP-N-oxide. The liver/lung ratio of IMP metabolizing activity varied with substrate concentrations used, indicating the unreliability of such ratios as indices of the relative contribution of the lung to drug metabolism. IMP N-oxidation by lung tissue was mediated by a noncytochrome P-450 system. 34 references. (Author abstract modified)

002846 Okamoto, Koichi; Sakai, Yutaka. Dept. of Pharmacology, National Defense Medical College, 525 Tokorozawa, Saitama 359, Japan **Inhibitory actions of taurocyamine, hypotaurine, homotaurine, taurine and GABA on spike discharges of Purkinje cells, and localization of sensitive sites, in guinea pig cerebellar slices.** Brain Research. 206(2):371-386, 1981.

The effects of the possible metabolites of taurine (taurocyamine and hypotaurine) and of homotaurine on spike discharge frequency of guinea-pig cerebellar Purkinje cells were investigated in comparison with taurine and GABA. Taurocyamine, hypotaurine, and homotaurine all dose dependently suppressed the spike frequency with potencies relative to taurine of 6, 0.5, and 500, respectively. Both picrotoxin and strychnine competitively blocked the inhibition by all the substances tested, except for the noncompetitive antagonism by picrotoxin on taurocyamine. The sites sensitive to taurocyamine and hypotaurine were situated primarily in the dendritic region of the cerebellar molecular layer, while those to homotaurine were primarily near the Purkinje cell soma. The onset of the inhibitory action of taurine and related sulfur containing substances was found to be slower than that of GABA. 24 references. (Author abstract modified)

002847 Olpe, Hans-Rudolf. Biology Research Laboratory, Pharmaceuticals Div., Ciba-Geigy Ltd. Basle, Switzerland **Differential effects of clomipramine and clorgyline on the sensitivity of cortical neurons to serotonin: effect of chronic treatment.** European Journal of Pharmacology. 69(3):375-377, 1981.

The sensitivity of rostral and cingulate cortical neurons to microiontophoretically applied serotonin (5-HT) was significantly reduced in male Tif:RAIf rats treated chronically with clorgyline (0.3mg/kg i.p. for 10 days). No change in cortical sensitivity to 5-HT was observed in rats treated chronically with clomipramine (10mg/kg i.p for 4 weeks). These findings are consistent with biochemical studies showing a decrease in 5-HT receptors after chronic treatment with clorgyline, but not after chronic treatment with clomipramine. 8 references. (Author abstract modified)

002848 Olsen, Richard W.; Leeb-Lundberg, Frederick. Division of Biomedical Sciences, University of California, Riverside, CA 92521 **Convulsant and anticonvulsant drug binding sites related to GABA-regulated chloride ion channels.** Advances in Biochemical Psychopharmacology. 26:93-102, 1981.

Radioactive drug binding studies of mammalian brain in vitro, which indicate that two classes of drug receptor sites (for picrotoxin like convulsants and barbiturates and for benzodiazepines) are related to many of the pharmacological actions of these drugs and which suggest that these receptors are coupled to the postsynaptic membrane GABA receptor/chloride ion channel complex, are summarized. A hypothetical model of the GABA receptor/Chloride ion channel complex, which incorporates

three drug receptors (GABA, picrotoxin/barbiturates, and benzodiazepine) and the functional portion of the system, the chloride ion channel, is proposed. It is speculated that this system and its associated endogenous ligands are intimately involved in nervous system structures related to excitability control and seizure disorders, and possibly related to sleep and anxiety. 40 references.

002849 Ortega-Bevia, F.; Gonzalez-Vilches, J.; Fernandez, R. Depto. de Psiquiatria y Psicologia Medica, Facultad de Medicina, Universidad de Sevilla, Sevilla, Spain **/Neuroleptic action on hepatic enzymatic activity./** Accion de los neurolepticos sobre la actividad enzimatica hepatica. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(2):51-58, 1980.

The action of neuroleptics on hepatic biochemistry was studied. A total of 11 neuroleptics was administered orally to groups of six rats, one drug per group. Blood samples of each group were examined to determine the hepatic parenchemistry. Results show that the neuroleptics provoked an increase in serum activity in enzymatic substances and a decrease in the action of such substances in the hepatic parenchemistry. The indications for each neuroleptic drug are presented.

002850 Ortega-Bevia, F.; Gonzalez-Vilches, J.; Fernandez, R. Depto. de Psiquiatria y Psicologia Medica, Universidad de Sevilla, Sevilla, Spain **/Phenothiazine action on cerebral 5-hydroxytryptamine./** Accion de las fenotiazinas sobre la 5-HT cerebral. Revista de Psiquiatria y Psicologia Medica de Europa etc. 14(7):183-187, 1980.

A comparative analysis of the action of different phenothiazine drugs on cerebral 5-hydroxytryptamine (5-HT) was done. The change in concentration of this substance in the cerebrum of rats was studied experimentally. Results show that the intensity of the specific action of the different phenothiazines on 5-HT is not related to the particular group of drugs. Some of the drugs are more effective as antipsychotic drugs. (Journal abstract modified)

002851 Ortega-Bevia, F.; Gonzalez-Vilches, J.; Fernandez, R. Depto. de Psiquiatria y Psicologia Medica, Universidad de Sevilla, Sevilla, Spain **/Long-acting antipsychotic drugs and cerebral 5-hydroxytryptamine./** Antipsicoticos de accion prolongada y 5-HT cerebral. Revista de Psiquiatria y Psicologia Medica de Europa etc. 14(7):189-192, 1980.

The effect of different long-acting antipsychotic drugs on the concentration of cerebral 5-hydroxytryptamine (5-HT) in rats was studied. The drugs included chlorpromazine, pipothiazine palmitate, fluphenazine decanoate, reserpine, and pipothiazine undecylenate, all administered i.m. in 1mg dosages. Results show a greater concentration of cerebral 5-HT in all cases in comparison to the control group except for the group treated with reserpine, which had levels similar to those observed in the control group. (Journal abstract modified)

002852 Overstreet, David H.; Driscoll, Peter; Martin, James R.; Yamamura, Henry I. Martin: Behavioral Biology Lab., Swiss Federal Institute of Technology, E.T.H.Z., CH-8092 Zurich, Switzerland **Brain muscarinic cholinergic receptor binding in Roman high- and low-avoidance rats.** Psychopharmacology. 72(2):143-145, 1981.

The hypothesis that behavioral differences between Roman high avoidance (RHA/Verh) and Roman low avoidance (RLA/Verh) rats reflect differences in the number and/or affinity of brain muscarinic cholinergic receptors was investigated. The binding of the specific muscarinic antagonist 3H-quinuclidinyl benzilate to crude membrane preparations from cerebral cortex, hippocampus, and striatum was determined. There were no significant differences between the two rat lines for the number of muscarinic binding sites or the apparent dissociation constant, as determined by Scatchard analysis of the saturation isotherms. These data indicate that the behavioral differences between RHA/Verh and RLA/Verh rats cannot be accounted for by differences in the number or affinity of brain muscarinic cholinergic receptors. 24 references. (Author abstract modified)

002853 Owens, Dennis P.; Cicero, Theodore J. Cicero: Dept. of Psychiatry, Washington University School of Medicine, 4940 Audubon Avenue, St. Louis, MO 63110 **Development of acute tolerance to the effects of naloxone on the hypothalamic-pituitary-luteinizing hormone axis in the male rat.** Journal of Pharmacology and Experimental Therapeutics. 216(1):135-141, 1981.

The acute development of tolerance to the effects of naloxone on the hypothalamic/pituitary/luteinizing hormone (LH) axis was demonstrated in the male rat. Naloxone causes rapid, dose dependent increases in serum LH levels in the male, apparently by blocking the actions of an endogenously occurring opioid peptide which normally inhibits the release of LH. It was found that naloxone pretreatment markedly reduced naloxone induced increases in serum LH after a second identical injection if the interval between the first and second injections was 2 to 4 hr. The diminished LH response to a second naloxone injection satisified the two pharmacological criteria for the establishment of tolerance: a parallel shift to the right in the dose response curve; and a reduced response to naloxone at the same brain concentration of the antagonist in tolerant vs. nontolerant rats. 37 references. (Author abstract modified)

002854 Pannier, L.; Rommelspacher, H. Institut fur Neuropsychopharmakologie der Freien Universitat Berlin, Ulmenallee 30, D-1000 Berlin 19, West Germany **Actions of tetrahydronorharmane (tetrahydro-beta-carboline) on 5-hydroxytryptamine and dopamine mediated mechanisms.** Neuropharmacology. 20(1):1-8, 1981.

The effects of neurotoxic agents or thermolytic lesions on serotonin (5-HT) dependent mechanisms were investigated in the hyperactivity syndrome test. 5-Hydroxytryptophan as well as tetrahydronorharmane (THN) evoked the syndrome in a dose dependent manner. Lesions of the raphe nuclei reduced the THN elicited activity syndrome. 6-Hydroxydopamine (6-OHDA) had no effect under the same conditions. Injection of p-chlorophenylalanine (p-CPA) caused a shift to the left of the THN curve. Following two doses of p-CPA on consecutive days, THN induced a cataleptic syndrome. Pretreatment with p-CPA as well as lesions of the raphe nuclei reduced apomorphine induced compulsive licking, indicating that the integrity of 5-HT containing neurons is required for the action of apomorphine. Licking movements were diminished by THN. Pretreatment with 6-OHDA strengthened this action of THN. The effect can be explained by an inhibition of postsynaptic dopaminergic receptors by THN which is not modulated by the stimulating action of 5-HT neurons on DA containing cells after their destruction by 6-OHDA. 39 references. (Author abstract modified)

002855 Pasantes-Morales, H.; Gamboa, A. Centro de Investigaciones en Fisiologia Celular, Universidad Nacional Autonoma de Mexico, A. P. 70-600, Mexico 20, DF, Mexico **Effect of taurine on 45Ca2 accumulation in rat brain synaptosomes.** Journal of Neurochemistry. 34(1):244-246, 1980.

The accumulation of labeled calcium ions (45Ca2) in Wistar rat cortical synaptosomes was inhibited markedly by the presence of taurine (5mM to 25mM) in the incubation medium. In synaptosomes a specific uptake system, showing the properties of a high affinity transport mechanism, was studied for taurine.

The effect of taurine was observed only in media containing bicarbonate. Beta-alanine also altered 45Ca2 accumulation, but GABA, glycine, and glutamate were inactive. Results support the postulated role of taurine in the modulation of calcium fluxes in excitable tissues. 24 references.

002856 Pasantes-Morales, H.; Salceda, R.; Lopez-Colome, A. M. Centro de Investigaciones en Fisiologia Celular, Universidad Nacional Autonoma de Mexico, Apartado Postal 70-600 Mexico 20, D.F., Mexico **The effect of colchicine and cytochalasin B on the release of taurine from the chick retina.** Journal of Neurochemistry. 34(1):172-177, 1980.

Colchicine caused a marked decrease in (35S)taurine release evoked by potassium chloride, meratridine, or glutamate in chick retina. Colchicine also decreased potassium evoked release of (3H)dopamine but not of (3H)GABA. Cytochalasin-B decreased the efflux of (35S)taurine stimulated by glutamate or veratridine, but not that evoked by potassium chloride; it suppressed the potassium evoked release of (3H)dopamine and slightly decreased that of (3H)GABA. Cytochalasin-B also produced a large increase in the spontaneous release of labeled GABA and taurine. Results suggest that GABA and taurine release from the chick retina occur through different mechanisms. 28 references. (Author abstract modified)

002857 Paul, Steven M.; Marangos, Paul J.; Skolnick, Phil. Clinical Psychobiology Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **The benzodiazepine-GABA-chloride ionophore receptor complex: common site of minor tranquilizer action.** Biological Psychiatry. 16(3):213-229, 1981.

A review of recent research into the benzodiazepine-GABA-chloride ionophore receptor complex is presented, with focus on recent NIMH findings of drug influences on this supramolecular receptor complex. The demonstration of specific recognition sites for benzodiazepines in the mammalian CNS has altered current thinking on the mechanisms of action of the benzodiazepine, as well as the neurochemical events which are associated with anxiety. Recent studies suggest that the physiological regulation of the benzodiazepine receptor is far more complex than initially believed, and includes a functional coupling to both a GABA receptor and an associated chloride ionophore. It now appears that a number of other psychopharmacological agents, including minor tranquilizers other than the benzodiazepines, as well as several convulsants and anticonvulsants, may exert their pharmacologic effects by affecting one or more regulatory sites on the benzodiazepine receptor complex. In addition to a number of drugs, at least one endogenous, small molecular weight compound that has been isolated from the crude synaptosomal fraction of bovine cerebral cortex also appears to modulate this receptor complex. 32 references. (Author abstract modified)

002858 Pearson, S.; Nunn, P. B. Nunn: Dept. of Biochemistry, King's College London, Strand, London WC2R 2LS, England **The neurolathyrogen, beta-N-oxalyl-L-alpha,beta-diaminopropionic acid, is a potent agonist at frog spinal cord.** Brain Research. 206(1):178-182, 1981.

A neurotoxic amino acid, beta-N-oxalyl-L-alpha,beta-diaminopropionate (beta-ODAP), found in seeds of Lathyrus sativus and a possible causative agent of neurolathyrism, was found equipotent with kainate as a depolarizing agent on frog spinal cord ventral roots. The actions of kainate and beta-ODAP were pharmacologically indistinguishable, suggesting that activation of a common receptor is involved in their actions. If kainate and N-methyl-D-asparate (NMDA) receptors are present in human spinal cord, as in cat and frog spinal cord, these data may be relevant to the etiology of neurolathyrism. 16 references. (Author abstract modified)

002859 Percy, Vivienne A.; Lamm, Manja C. L.; Taljaard, Joshua J. F. MRC Neurochemistry Research Group, Dept. of Stellenbosch, P. O. Box 63, Tygerberg 7505, South Africa **Effects of delta-aminolaevulinic acid, porphobilinogen, amino acids and barbiturates on calcium accumulation by cultured neurons.** Biochemical Pharmacology. 30(6):665-666, 1981.

The effects of delta-aminolaevulinic acid (ALA), porphobilinogen (PBG), amino acids, and barbiturates on calcium accumulation by cultured neurons are described. Results indicate the PBG does not affect calcium accumulation and, although ALA previously has been shown to inhibit the K stimulated release of GABA from synaptosomal preparations, it did not affect the K stimulated influx of calcium into cultured neurons. ALA previously has been demonstrated to stimulate GABA and glutamic acid release from unstimulated synaptosomes, yet ALA did not affect calcium accumulation by cultured neurons. Results suggest that ALA exerts its effects on neurotransmitter release without altering membrane permeability to calcium ions. 23 references. (Author abstract modified)

002860 Peroutka, Stephen J.; Snyder, Solomon H. Snyder: Dept. of Neuroscience, Johns Hopkins University School of Medicine, 725 N. Wolfe St. Baltimore, MD 21205 **(3H)Mianserin: differential labeling of serotonin and histamine receptors in rat brain.** Journal of Pharmacology and Experimental Thrapeutics. 216(1):142-148, 1981.

Mianserin, a tetracyclic antidepressant which is a potent serotonin (5-HT) and histamine H1 antagonist in peripheral smooth muscle, was found to possess high affinity for 5-HT2 and histamine H1 receptor binding sites in brain membranes. By using (3H)mianserin, both 5-HT2 and histamine H1 receptors can be specifically labeled in rat cerebral cortex membranes. Simultaneous incubation of brain membranes with 300nM triprolidine or 30nM spiroperidol enables the selective labeling of 5-HT2 or histamine H1 receptors, respectively. In the guinea-pig cerebellum, (3H)mianserin exclusively labels histamine H1 receptors, since 5-HT2 sites are virtually absent in this area. 24 references. (Author abstract modified)

002861 Peroutka, Stephen J.; Snyder, Solomon H. Snyder: Dept. of Psychiatry and Behav. Sciences, Johns Hopkins University School of Medicine, 725 North Wolfe St., Baltimore, MD 21205 **Two distinct serotonin receptors: regional variations in receptor binding in mammalian brain.** Brain Research. 208(2):339-347, 1981.

Regional variations in receptor binding in mammalian brain for serotonin (5-HT) agonists and antagonists were investigated. Two distinct 5-HT receptors in mammalian brain are labeled respectively with (3H)serotonin (5-HT1) and (3H)spiperone (5-HT2). In general, agonists display highest affinities for 5-HT1 while antagonists prefer 5-HT2 sites. 5-HT2 sites were estimated with (3H)spiperone, using the 5-HT2 specific antagonist cinanserin to displace binding to 5-HT2 but not dopamine receptors and sulpiride to displace (3H) spirperone from dopamine but not 5-HT receptors. The regional distribution of the two 5-HT receptors is similar in rat, guinea-pig, and bovine brain. However, the regional patterns of 5-HT1 and 5-HT2 receptors differ considerably in all three species. 12 references. (Author abstract modified)

002862 Peterson, S. L.; Albertson, T. E.; Stark, L. G.; Joy, R. M.; Gordon, L. S. Dept. of Pharmacology, School of Medicine, University of California at Davis, Davis, CA 95616 **Cumulative after-discharge as the principal factor in the acquisition of kindled**

seizures. Electroencephalography and Clinical Neurophysiology. 51(2):192-200, 1981.

The role of afterdischarge in the development of behavioral and electrographic seizures (kindling) was evaluated. Rats were stimulated (amygdala) once daily for 10 days 30 minutes after an intraperitoneal injection of diazepam, phenobarbital, propranolol, or vehicle. Following a 10 day period to allow for drug elimination, the daily stimulations (without drug) resumed until all animals responded with fully kindled seizures. Only the lowest dosage groups of diazepam and phenobarbital showed a savings in the number of stimulations to kindle in the nondrug state. This suggests that little or no kindling development had occurred in the drug state with the high doses. As an alternative measure of kindling, the number of seconds of cortical afterdischarge accumulated in the drug state, the nondrug state, and the grand total required to kindle were averaged and compared between the drug and control groups. No significant differences were found. Results suggest that a specific quantity of afterdischarge must be elicited to kindle (200 to 300 sec) and that any afterdischarge elicited in the presence of phenobarbital or diazepam will contribute to that quantity. 20 references. (Author abstract modified)

002863 Picotti, Giovanni B.; Carruba, Michele O.; Ravazzani, Carla; Cesura, Andrea M.; Galva, Maria D.; Da Prada, Mose. Institute of Pharmacology, School of Medicine, University of Milan, Via Vanvitelli 32, I-20129 Milano, Italy **Plasma catecholamines in rats exposed to cold: effects of ganglionic and adrenoreceptor blockade.** European Journal of Pharmacology. 69(3):321-329, 1981.

Plasma noradrenaline (NA) concentrations in male Wistar and Sprague-Dawley rats exposed to cold for 30 minutes to 24 hours were twice as high as baseline levels. Plasma adrenaline and dopamine levels were not altered by cold exposure. The cold induced increase in plasma NA concentrations in adrenalectomized animals was similar to that in intact animals. In rats given chlorisondamine to impair catecholamine release or phentolamine to impede the vasoconstrictor response, plasma adrenaline levels increased concomitantly with NA levels. Propranolol did not alter the acute neurosympathetic response to cold. 32 references. (Author abstract modified)

002864 Pohorecky, Larissa A.; Rizek, America E. Center of Alcohol Studies, Rutgers University, New Brunswick, NJ 08903 **Biochemical and behavioral effects of acute ethanol in rats at different environmental temperatures.** Psychopharmacology. 72(2):205-209, 1981.

The effects of ethanol induced hypothermia on selected biochemical and behavioral parameters were investigated in rats. Rats were kept from 1 hour preinjection to 1 hour postinjection (saline or ethanol) in an environment chamber at either 22 degrees C or 35 degrees C and then tested behaviorally or biochemically. Exposure of rats to a warm environment (35 degrees C) prevented the ethanol induced hypothermia found in rats kept at 22 degrees C. Ethanol treated rats kept at 35 degrees C had an attenuated increase in levels of free fatty acids and of corticosterone in plasma, suggesting that part of the ethanol induced response may result from hypothermia rather than from ethanol itself. In addition, tyrosine levels were unexpectedly increased by 18% in intoxicated animals kept at 35 degrees C. By contrast, gross motor activity and swim performance were impaired to a greater extent in the animals kept at 35 degrees C. The greater behavioral impairment was not due to any debilitating effects of the warm environment, since the saline control animals showed comparable activity to that of rats kept at 22 degrees C. It is concluded that ethanol induced hypothermia may influence and interact with other actions of ethanol. 32 references. (Author abstract modified)

002865 Pokorny, J.; Novakova, V.; Sterc, J. Institute of Physiology, CSAV, Videnska 1083, CS-142 20 Praha, Czechoslovakia **Bioelectrical activity of the rat brain after premature weaning and after RNA administration.** Activitas Nervosa Superior. 22(4):254-263, 1980.

Bioelectrical activity in the rat brain was studied after premature weaning and after RNA administration. Male rats prematurely weaned on the 15th day exhibited an increase in seizure susceptibility in the septum, hypothalamus, and hippocampus, when tested in adulthood. The resting EEG of these animals exhibited characteristic changes in the EEG spectrum power density by shifts in the power of individual frequencies. The administration of RNA to adult prematurely weaned animals affected, in all structures under study, the seizure susceptibility as well as the resting EEG, having caused in septum and hippocampus the return to values found in normally weaned rats. In hypothalamus, the administration of RNA also partially normalized the EEG. 21 references. (Author abstract modified)

002866 Post, Robert M.; Lockfeld, Alexandre; Squillace, Kathleen M.; Contel, Nancy R. Section on Psychobiology, Biological Psychiatry Branch, NIMH, Building 10, Room 3S239, Bethesda, MD 20205 **Drug-environment interaction: context dependency of cocaine-induced behavioral sensitization.** Life Sciences. 28(7):755-760, 1981.

The effect of the environmental context in which rats received cocaine upon subsequent cocaine induced hyperactivity and stereotypy was explored. Cocaine test cage animals were injected with cocaine in the test cage and then received saline upon leaving it 40 min later, while in the saline test cage group, the injections were in the reverse order. Thus, all animals had identical injections, handling, and environmental exposure, differing only in whether they received cocaine during or after their test cage experience. The cocaine test cage animals displayed increasing response to the 10 daily cocaine injections, i.e., behavioral sensitization. However, in contrast, the saline test cage animals had significantly less cocaine induced activation upon two of three challenges with cocaine and showed no significant evidence of behavioral sensitization even though they had received the same dose and number of previous cocaine injections in a different environment. Thus, this study reveals environment specific drug effects and suggests that environmental context plays a role in the development and manifestation of behavioral sensitization to cocaine. 22 references. (Author abstract)

002867 Pradhan, Sikta; Alphs, L.; Lovenberg, W. Section of Biochemical Pharmacology, Hypertension-Endocrine Branch, NHLBI, NIH, Bethesda, MD 20205 **Characterization of haloperidol-mediated effects on rat striatal tyrosine hydroxylase.** Neuropharmacology 20(2):149-154, 1981.

Short-term treatment of male Sprague-Dawley rats with haloperidol altered the affinity of striatal tyrosine hydroxylase (TH) for cofactor. These drugs effects were more prominent at pH 6.0 to 6.6 than at the pH optimum for striatal TH (5.8 to 6.0). Tolerance to the effects of haloperidol was apparent 2 weeks after the 10 day haloperidol treatment was terminated. 18 references. (Author abstract modified)

002868 Prakash, Madhavi Ratnam; Baouer, Najma Zaheer. Baouer: School of Life Sciences, Jawaharlal Nehru University, New Mehrauli Road, New Delhi 110067, India **Inhibition of gamma-aminobutyric acid transaminase with 6-aminonicotinamide**

in regions of the rat brain. Biochemical Pharmacology. 30(6):663-664, 1981.

The effects of 6-aminonicotinamide (6-AN) on gamma-aminobutyric acid transaminase (GABA-T) were studied in three regions of the rat brain. GABA-T activity was significantly decreased in cerebral hemispheres, cerebellum, and brainstem after 4 hours of drug treatment. Enzyme activity returned to control values in cerebral hemispheres and brainstem after 16 hours of drug treatment. In the cerebellum, however, GABA-T activity increased above control values by 41% at 16 hours. 6-AN appears to affect the GABA shunt and may be useful in studying this pathway in the CNS. 14 references. (Author abstract modified)

002869 Pycock, C. J.; Carter, C. J.; Kerwin, R. W. Dept. of Pharmacology, Medical School, University of Bristol, Bristol, BS8 1TD, England **Effect of 6-hydroxydopamine lesions of the medial prefrontal cortex on neurotransmitter systems in subcortical sites in the rat.** Journal of Neurochemistry. 34(1):91-99, 1980.

The effect of lesions of catecholamine nerve terminals in the medial prefrontal cortex of the male Porton rat on neurotransmitter mechanisms in the basal ganglia were studied. Bilateral 6-hydroxydopamine lesions were placed stereotaxically in animals pretreated with desmethylimipramine. The lesion produced a selective reduction of noradrenaline and dopamine from the medial prefrontal cortex and a decrease in tyrosine hydroxylase activity in this region. Dopmamine turnover and use in striatal and limbic regions were enhanced. Subcortical tyrosine hydroxylase activity was not altered. GABA and 5-hydroxytryptamine levels and glutamate decarboxylase and choline acetyltransferase activities were decreased in certain regions of the basal ganglia. Results suggest that frontal cortical catecholamine systems may regulate various neurotransmitter mechanisms in the basal ganglia. 38 references. (Author abstract modified)

002870 Quik, M.; Smith, P. A.; Padjen, A. L.; Collier, B. Dept. of Pharmacology, McIntyre Medical Building, McGill University, 3655 Drummond St., Montreal, Quebec H3G 1Y6, Canada **A critical evaluation of the use of toxins from dendroaspis viridis to block nicotinic responses at central and ganglionic synapses.** Brain Research. 209(1):129-143, 1981.

The use of toxins from Dendroaspis viridis to block nicotinic responses at central and ganglionic synapses is critically evaluated. Dendroaspis viridis venom was fractionated into its toxin components. Only one of the fractions possessed activity as assessed by: 1) inhibition of alpha-bungarotoxin (alpha-BGT) binding at the neuromuscular junction; or 2) inhibition of the ventral root/dorsal root potential (VR/DRP), a nicotinic response in frog spinal cord. However, in the spinal cord preparation, in addition to this blockade of the nicotinic pathway, convulsant activity and an increase in the amplitude of other root potentials was observed. Binding experiments using 125I dendrotoxin demonstrated that the labeled compound bound to CNS tissue such as brain or spinal cord; this was not displaced by nicotine or D-tubocurarine, a nicotinic antagonist, indicating either nonspecific binding or binding to a nonnicotinic receptor. These results suggest that toxins from Dendroaspis viridis venom are not suitable ligands for central nicotinic receptors. In addition, since dendrotoxins do not block cholinergic transmission in frog sympathetic ganglia, their use at ganglionic nicotinic receptors is contraindicated. 29 references. (Author abstract modified)

002871 Ragavan, Vanaja V.; Frantz, Andrew G. Dept. of Medicine, Columbia University College of Physicians and Surgeons, 630 West 168th St., New York, NY 10032 **Suppression of serum prolactin by naloxone but not by anti-beta-endorphin antiserum in stressed and unstressed rats.** Life Sciences. 28(8):921-929, 1981.

The role of endogenous opioids in the regulation of tonic and stress induced prolactin (PRL) secretion was studied in male rats. Animals with chronically indwelling intraatrial catheters were used and served as their own controls. Intravenous injection of a potent rabbit anti-beta-endorphin antiserum produced no change in either baseline serum PRL or in the rise induced by swimming for 15 min at 20 C. Naloxone produced a small but significant lowering of baseline serum PRL levels, as well as a mild blunting of the stress induced serum prolactin rise. The failure of anti-beta-endorphin antiserum to affect serum PRL may be explained either by failure of the antiserum to gain access to hypothalamic PRL regulating loci, or to lack of involvement of beta-endorphin in the control of serum PRL. The suppression of prolactin secretion seen with naloxone indicates that endogenous opioids are involved in prolactin regulation, though the relatively small magnitude of the changes observed suggests that their role under physiological conditions may be a minor one. 44 references. (Author abstract)

002872 Ravizza, L.; Bogetto, F.; Torre, E.; Rebaudengo, P. Istituto di Clinica Psichiatrica, Universita di Torino, Torino, Italy **/Norepinephrine and dopamine cerebral levels after chronic treatment with nomifensine./** Livelli di NE e DA cerebrali dopo trattamento cronico con nomifensina. Minerva Psichiatrica. 21(1):55-56, 1980.

Cerebral levels of norepinephrine (NE) and dopamine (DA) were studied in rats after treatment with nomifensine. A group of six albino Wistar rats were administered 10mg/kg for a period of 10 days. A control group received a placebo. The NE and DA levels were measured. Results show a statistically significant increase of both levels in the experimental group. The data are compared to similar research found in the literature. 4 references. (Journal abstract modified)

002873 Ravizza, L.; Torre, E.; Bogetto, F.; Rebaudengo, P. Istituto di Clinica Psichiatrica, Universita di Torino, Torino, Italy **/Acute action of nomifensine on norepinephrine and dopamine levels in the rat brain./** Azione acuta della nomifensina sui livelli di NE e DA del cervello di ratto. Minerva Psichiatrica. 21(1):45-47, 1980.

The action of nomifensine on the norepinephrine (NE), dopamine (DA), and 5-hydroxytryptamine (5-HT) cerebral levels in rats was studied. The experimental group (12 rats) was administered nomifensine in a dosage of 20mg/kg; the control group was not administered any drug. The DA, NE, and 5-HTR levels were measured in both groups. Results show that in the experimental group the DA level decreased significantly, while the NE level showed no significant variation. These results are compared to similar research studies. 11 references. (Journal abstract modified)

002874 Regan, John W.; Yamamura, Henry I.; Yamada, Shizuo; Roeske, William R. Roeske: Dept. of Internal Medicine, University of Arizona, Health Sciences Center, Tucson, AZ 85724 **High affinity renal (3H)flunitrazepam binding: characterization, localization, and alteration in hypertension.** Life Sciences. 28(9):991-998, 1981.

The binding of (3H)flunitrazepam was studied in membranes prepared from the kidney and cerebral cortex of unilaterally nephrectomized rats made hypertensive by simultaneous deoxycorticosterone acetate (DOCA) and NaCl administration. A significant increase (35% to 43%) in the number of (3H)flunitrazepam binding sites was found in the renal membranes prepared from the hypertensive rats; there was no

change in the density of binding sites in the membranes obtained from the cerebral cortex. Drug specificity studies with renal membranes show that the inhibition of (3H)flunitrazepam binding by various benzodiazepines is not correlated with their pharmacologic potency as anxiolytic agents. The evidence that the renal benzodiazepine binding site is of high affinity, is specific, has a unique distribution, and is regulated during hypertension suggests that it may be associated with an important pathophysiologic structure. 21 references. (Author abstract modified)

002875 Rehavi, Moshe; Ramot, Orly; Yavetz, Bella; Sokolovsky, Mordechai. Sokolovsky: Dept. of Biochemistry, George S. Wise Faculty of Life Sciences, Tel-Aviv University, Tel-Aviv, Israel **Amitriptyline: long-term treatment elevates alpha-adrenergic and muscarinic receptor binding in mouse brain.** Brain Research. 194(2):443-453, 1980.

Alpha-adrenergic, muscarinic, and dopaminergic receptor binding in male ICR mouse brain was not altered by treatment with amitriptyline for 7 or 14 days. After 21 days of treatment with the tricyclic antidepressant, however, a twofold increase in alpha-adrenergic binding and a moderate (25%) increase in muscarinic receptor binding were detected in the medulla pons and hippocampus. No change in dopaminergic receptor binding was detected. Scatchard analysis showed that the increases in receptor density were not the result of changes in dissociation constants of tritiated ligands for their receptors. It is suggested that the increases in alpha-adrenergic and muscarinic binding were due to chronic blockade of these two types of receptors by amitriptyline. 33 references. (Author abstract modified)

002876 Roquebert, Jacques; Demichel, Patricia. Laboratoire de Pharmacodynamie, U.E.R. de Pharmacie Universite de Bordeaux II, 3 place de la Victoire, F-33000 Bordeaux, France **Calcium antagonism of the inhibitory effects of fentanyl on the contraction of the nictitating membrane in cats.** European Journal of Pharmacology. 70(1):87-90, 1981.

The contractile responses elicited from the nictitating membrane of cats by postganglionic sympathetic nerve stimulation were decreased by fentanyl (10 to 20mcg/kg injected in the lingual artery). Fentanyl (10 to 25mcg/kg) did not alter the contractile responses to noradrenaline and tyramine. The inhibitory effect of fentanyl was antagonized by naloxone. Increases in plasma calcium concentration did not alter the contractile response to sympathetic nerve stimulation, but antagonized the inhibitory effect of fentanyl in a dose dependent manner. 7 references. (Author abstract modified)

002877 Rotrosen, John; Stanley, Michael; Lautin, Andrew; Wazer, David; Gershon, Samuel. New York Veterans Administration Medical Center, New York, NY **Discrimination of functionally heterogeneous receptor subpopulations: antipsychotic and antidopaminergic properties of metoclopramide.** Psychopharmacology Bulletin. 17(1):110-113, 1981.

The discrimination of functionally heterogeneous receptor subpopulations by metoclopramide, a substituted benzamide derivative which is structurally similar to procainamide and sulpiride, is described. In a series of projects designed to evaluate the relevancy and role of dopamine (DA) binding sites and adenylate cyclase coupled DA receptors as mediators of antidopamine effects and antipsychotic activity, metoclopramide effects were studied. It is proposed that a subpopulation of DA/neuroleptic binding sites represents the receptors that are funcitonally important as mediators of DA antagonisms in general, and metoclopramide's action in particular. Metoclopramide differs from other DA antagonists insofar as it displays specificity for these relevant sites, but not for numerous others. 12 references. (Author abstract modified)

002878 Rumigny, Jean-Francois; Maitre, Michel; Recasens, Max; Blindermann, Jean-Marc; Mandel, Paul. Centre de Neurochimie du CNRS and INSERM 44, Faculte de Medecine, 11 rue Humann, F-67085 Strasbourg Cedex, France **Multiple effects of repeated administration of gamma-acetylenic GABA on rat brain metabolism.** Biochemical Pharmacology. 30(4):305-312, 1981.

The effects of chronic injections of gamma-acetylenic GABA on some parameters of rat behavior and cerebral amino acid metabolism are presented. When 4-amino-hex-5-ynoic acid, the acetylenic analogue of GABA, is given chronically to rats over a period of 8 days, several biochemical modifications are found in the brain. The following enzymatic activities are severely affected: GABA-transaminase (GABA-T), glutamate decarboxylase (GAD), alanine aminotransferase (Ala-T), and to a lesser extent glutamate oxaloacetate transaminase (GOT) and cystein sylphinate transaminase (CSA-T). The drug does not appear to interfere with pyridoxal phosphate synthesis. Increases in cerebral GABA, glutamate, alanine, phenylalanine, ornithine, and taurine levels were observed. There were no changes in the levels of GAD and GABA-T apoenzymes despite a chronic increase in the brain GABA level. These biochemical alterations are accompanied by behavioral changes including grand mal like seizures and a modification of feeding activity. Considering the multiple biochemical effects of the drug, these behavioral changes are probably not related to a specific alteration in GABA metabolism. 42 references. (Author abstract modified)

002879 Rylett, B. Jane; Colhoun, E. Howard. Colhoun: Dept. of Pharmacology, University of Western Ontario, London, Ontario, Canada N6A 5C1 **Kinetic data on the inhibition of high-affinity choline transport into rat forebrain synaptosomes by choline-like compounds and nitrogen mustard analogues.** Journal of Neurochemistry. 34(3):713-719, 1980.

Choline analogues and nitrogen mustard derivatives were evaluated as inhibitors of high affinity transport of choline in female Sprague-Dawley rat forebrain synaptosomes. When synaptosomes were preincubated for 10 minutes with choline mustard aziridinium ion, monoethylcholine, and monoethylcholine mustard aziridinium ion, the agents appeared to be equipotent as inhibitors of high affinity uptake. Acetylcholine mustard aziridinium ion was less potent than these compounds, but more potent than ethoxycholine and ethoxycholine mustard aziridinium ion. High affinity choline transport mechanisms were specific for hydroxylated compounds over those in which the hydroxyl had been acetylated and removal of the carbonyl oxygen of the acetylated analogues decreased affinity another 20-fold. The aziridinium ring on the nitrogen of the mustard analogues was important in determining the extent of reversibility of the binding of these agents to the carrier protein. It is concluded that the mustard analogues may be potent alkylators of the high affinity choline carrier and, therefore, agents in monitoring acetylcholine turnover in systems where the carrier is blocked. 57 references. (Author abstract modified)

002880 Saller, Charles F.; Chiodo, Louis A. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Glucose suppresses basal firing and haloperidol-induced increases in the firing rate of central dopaminergic neurons.** Science. 210(4475):1269-1271, 1980.

In the rat, doses of glucose sufficient to raise glucose concentrations in the blood to levels equivalent to those produced by a meal or stress are reported to suppress the firing of dopamine containing neurons located within the substantia nigra. Glucose also prevented or reversed the increase in discharge rate of dopaminergic cells normally elicited by the antipsychotic agent haloperidol. Fructose did not change the discharge rates of dopa-

minergic cells. It is suggested that daily physiological fluctuations in glucose availability may influence significantly dopamine mediated activity in the brain. 16 references. (Author abstract modified)

002881 Savage, Daniel Dexter, II. University of Pennsylvania **3H-serotonin binding sites in rat brain: effects of repeated administration of antidepressant drugs. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):2997-B, 1981. Ann Arbor, Univ. Microfilms No. 8028886, 176p., 1980.

The effects of repeated administration to rats of serotonin uptake inhibitors or monoamine oxidase inhibitors on serotonin receptors and serotonin concentration in rat brain was examined. Four to 16 days of repeated administration of monoamine oxidase inhibitors (MAOI) capable of inhibiting A-type monoamine oxidase caused a significant reduction in specific 3H-serotonin binding in brain. Repeated administration of inhibitors of B-type monoamine oxidase had no effect on specific 3H-serotonin binding. In contrast to the MAOIs, the repeated administration of serotonin uptake inhibitors had no effect on specific 3H-serotonin binding sites. The relationships between changes in 3H-serotonin binding and changes in brain serotonin concentration in response to repeated administration of MAOIs was examined. The effect of MAOIs on serotonin receptor sites appears to be mediated indirectly by the MAOIs interfering with the metabolism of serotonin and leading to an increased exposure of serotonin receptors to serotonin. (Journal abstract modified)

002882 Sawynok, Jana; Labella, Frank S. Dept. of Pharmacology and Therapeutics, University of Manitoba, 770 Bannatyne Ave., Winnipeg, Manitoba, Canada R3E OW3 **GABA and baclofen potentiate the K-evoked release of methionine-enkephalin from rat striatal slices.** European Journal of Pharmacology. 70(2):103-110, 1981.

GABA potentiated the potassium (K) evoked release of methionine-enkephalin (ME) from slices of male Sprague-Dawley rat corpus striatum, but only when a submaximal concentration (30mM) of K was used. The effect of GABA was dose dependent between 100 and 1000mcM; at these concentrations, GABA did not alter basal release of ME. The effect of GABA on evoked release of ME was mimicked by both isomers of baclofen, but not by muscimol. Picrotoxin (100mcM) blocked the enhancement of ME release by GABA and baclofen. Bicuculline methiodine (100mcM) did not block the effect of GABA. The effect of GABA on ME release maybe mediated by an atypical GABA receptor which is activated by baclofen. 50 references. (Author abstract modified)

002883 Schatz, Robert A.; Stramentinoli, Giorgio; Sellinger, Otto Z. Mental Health Research Institute, University of Michigan, Ann Arbor, MI 48109 **Decreased cerebral catabolism of (3H)histamine in vivo after S-adenosylmethionine administration.** Journal of Pharmacology and Experimental Therapeutics. 216(1):118-124, 1981.

Decreased cerebral catabolism of (3H)histamine in vivo after administration of S-adenosyl-L-methionine (SAM) is described. Brains of SAM treated mice contained more (3H)histamine than vehicle treated controls at 20 sec, 2, 5, and 10 min. (3H)methylhistamine (MeHA) levels were lower than controls at 20 sec, but higher at 2 and 5 min. Fifteen min after intraventricular (3H)histidine, brains of SAM treated mice contained 47% more (3H)histimine and 39% more (3H)MeHA, while (3H)histidine and (3H)methylimidazoleacetic acid levels remained unchanged. In vitro, SAM had no effect on monoamine oxidase type-A or type-B. Thse findings demonstrate that the rate of catabolism of histamine to MeHA is significantly decelerated in brains containing elevated levels of SAM. 74 references. (Author abstract modified)

002884 Schultz, J. E.; Siggins, G. R.; Schocker, F. W.; Turck, M.; Bloom, F. E. Bloom: Arthur V. Davis Center for Behavioral Neurobiology, Salk Institute, P.O. Box 85800, San Diego, CA 92138 **Effects of prolonged treatment with lithium and tricyclic antidepressants on discharge frequency, norepinephrine responses and beta receptor binding in rat cerebellum: electrophysiological and biochemical comparison.** Journal of Pharmacology and Experimental Therapeutics. 216(1):28-38, 1981.

The prolonged actions of desipramine (DMI), imipramine,and lithium chloride (Li) were compared in electrophysiological and biochemical tests on rat cerebellum. Cerebellar Purkinje cells were studied by electrophysiological and iontophoretic techniques and cerebellar slices and homogenates were assessed in vitro for changes in beta receptor binding and responsitivity of the cyclic AMP system to norepinephrine (NE). Prolonged treatment with DMI or Li was found to produce changes in noradrenergic responsivity of cerebellar Purkinje neurons which are opposite to the effects of these drugs applied acutely by iontophoresis. These results provide electrophysiological evidence for reciprocal adaptive changes in NE sensitivity after chronic treatment with antidepressant drugs. 54 references. (Author abstract modified)

002885 Schulz, David W.; MacDonald, Robert L. Neurosciences Program, University of Michigan, Ann Arbor, MI 48109 **Barbiturate enhancement of GABA-mediated inhibition and activation of chloride ion conductance: correlation with anticonvulsant and anesthetic actions.** Brain Research. 209(1):177-188, 1981.

The anesthetic/sedative barbiturate pentobarbital (PB) and the anticonvulsant barbiturate phenobarbital (PhB) were applied to mammalian spinal cord neurons in primary dissociated cell culture to assess their effects on: 1) postsynaptic GABA responses; 2) paroxysmal activity produced by the convulsant bicuculline; 3) resting membrane properties; and 4) spontaneous neuronal activity. Results demonstrate that: 1) anticonvulsant actions occurred at barbiturate concentrations which augmented GABA responses; 2) anesthetic actions occurred at barbiturate concentrations which produced direct increases in chloride conductance; 3) both anticonvulsant and anesthetic actions occurred at clinically relevant concentrations; and 4) concentrations of PhB, but not PB, which produced GABA augmentation and direct conductance changes were widely separated. These findings support the hypotheses that augmentation of GABA mediated inhibition and possibly reduction of glutamate (GLU) mediated excitation form the basis at least in part for barbiturate anticonvulsant action and that addition of direct increases in chloride conductance to augmentation of GABA mediated inhibition and reduction of GLU mediated excitation may partially underlie anesthetic/sedative barbiturate action. 31 references. (Author abstract)

002886 Schwindt, P. C.; Crill, W. E. Seattle V. A. Medical Center, Seattle, WA 98108 **Voltage clamp study of cat spinal motoneurons during strychnine-induced seizures.** Brain Research. 204(1):226-230, 1981.

Cat spinal motoneurons were examined during strychnine induced spinal seizures by the technique of somatic voltage clamp. No clear alteration of voltage dependent ionic currents was required for typical strychnine induced paroxysmal depolarization shifts (PDSs) to develop in contrast to results previously obtained during penicillin induced spinal seizures. Voltage clamp of evoked and spontaneous PDSs indicates these are generated by a synchronized mixture of excitatory and inhibitory synaptic

currents with excitation predominating. 15 references. (Author abstract modified)

002887 Sellinger, Otto Z.; Dietz, Dennis D. Laboratory of Neurochemistry, Mental Health Research Institute, University of Michigan Medical Center, Ann Arbor, MI 48109 **The metabolism of 5-hydroxytryptamine in the methionine sulfoximine epileptogenic rat brain.** Journal of Pharmacology and Experimental Therapeutics. 216(1):77-82, 1981.

The effects of the slow acting convulsant agent L-methionine-dl-sulfoximine (MSO) on regional metabolism of cerebral 5-hydroxytryptamine (5-HT) were investigated. Results include: 1) 5-HT levels in brainstem, midbrain, hippocampus and cortex, and 5-hydroxyindoleacetic acid (5-HIAA) levels in the cortex and midbrain were decreased following a single dose of MSO; 2) pretreatment with MSO plus p-chlorophenylalanine caused a greater reduction of 5-HT levels in the midbrain and the hypothalamus than was noted after p-chlorophenylalanine alone; 3) pretreatment with MSO antagonized the elevation of 5-HT levels noted in the brainstem and the cortex 30 min after the administration of clorgyline, an inhibitor of monoamine oxidase, type-A; 4) pretreatment with MSO antagonized the reduction of 5-HIAA levels noted in the cortex and in the striatum after the administration of clorgyline; and 5) pretreatment with MSO also led to a significant reduction of the formation of (14C)5-HT from intraaterially administered (14C)5-hydroxytryptophan initially in the brainstem and subsequently in the striatum. It is suggested that MSO elicited, time dependent, regional perturbations of 5-HT metabolism mediate the desynchronization of the firing rates of inhibitory serotonergic fibers, and thus help to create the MSO epileptogenic state. 34 references. (Author abstract modified)

002888 Sharif, Najam A.; Roberts, Peter J. Roberts: Dept. of Physiology and Pharmacology, University of Southampton, Southampton S09 3TU, England **Effects of protein- and membrane-modifying agents on the binding of L-(3H)glutamate to cerebellar synaptic membranes.** Brain Research. 194(2):594-597, 1980.

The specific binding of L-(3H)glutamate to cerebellar synaptic membranes was modified by treating the membranes with proteolytic enzymes, phospholipase-A, lipid perturbants, and protein modifying reagents, and the effects of these substances on the glutamate binding were investigated. Modification of carboxyl or thiol groups increased glutamate binding, whereas oxidation, alkylation, and reduction of disulphide bonds denatured the receptor. Perturbation of protein or lipid moieties decreased binding, indicating the importance of protein/lipid interactions for the maintenance of a stable receptor conformation. 8 references.

002889 Sharpe, Lawrence G.; Pickworth, Wallace B. NIDA, Division of Research, Addiction Research Center, Lexington, KY 40583 **Pharmacologic evidence for a tonic muscarinic inhibitory input to the Edinger-Westphal nucleus in the dog.** Experimental Neurology. 71(1):176-190, 1981.

The cholinergic characteristics of the parasympathetic preganglionic cell groups controlling pupillary diameter were investigated, and pharmacologic evidence for a tonic muscarinic inhibitory input to the Edinger-Westphal nucleus in the dog was found. In the awake dog, carbachol, bethanechol, and physostigmine, but not nicotine, produced dose dependent mydriases when mirocinjected into sites within or near the Edinger-Wesphal nucleus. This cholinergic induced mydriasis was prevented by methylatropine nitrate. A muscarinic induced mydriasis appears to be due to inhibition of the pupilloconstrictor neurons because it occurs in the chonically sympathectomized and acutely decerebrated dog; and it does not correlate with sympathetic responses. 29 references. (Author abstract modified)

002890 Sharpless, Nansie S. Dept. of Psychiatry, Albert Einstein College of Medicine, Bronx, NY 10461 **Accelerated metabolism of probenecid during long-term treatment of rats with anticonvulsant drugs: effect on central serotonin turnover studies.** Neuropharmacology. 20(3):211-216, 1981.

The effect of long-term administration (once daily for 9 days) of phenytoin (50mg/kg), sodium phenobarbital (25mg/kg), primidone (50mg/kg), and L-5-hydroxytryptophan (L-5-HTP, 50mg/kg) on probenecid metabolism and on serotonin turnover rates were studied in male Sprague-Dawley rats. Chronic anticonvulsant drug treatment did not alter brain serotonin turnover. However, the rate of accumulation of 5-hydroxyindoleacetic acid (5-HIAA) in brain during the first 90 minutes after probenecid was lower in rats treated with phenobarbital than in controls. Brain 5-HIAA levels were elevated 6 hours after probenecid in rats treated with phenytoin, L-5-HTP, or vehicle, but not in those treated with phenobarbital or primidone. Serum concentrations of probenecid decreased more rapidly in rats treated with primidone or phenobarbital than in those given vehicle, L-5-HTP, or phenytoin. Results are discussed in relation to the use of probenecid induced accumulations of 5-HIAA to estimate central serotonin turnover rates. 21 references. (Author abstract modified)

002891 Shipley, J. E.; Rowland, Neil; Antelman, S. M.; Buggy, J.; Edwards, D.J.; Shapiro, A. P. Rowland: Dept. of Psychology, University of Pittsburgh, Pittsburgh, PA 15260 **Increased amphetamine stereotypy and longer haloperidol catalepsy in spontaneously hypertensive rats.** Life Sciences. 28(7):745-753, 1981.

Spontaneous hypertensive rats (SHR) of both sexes and from two sources were found to exhibit enhanced stereotyped behavior following amphetamine (AMP) administration. Both the intensity and the duration of sniffing and licking were higher in SHR than in Wistar or Sprague-Dawley controls. SHR exhibited longer catalepsy after haloperidol (HAL) than did controls. Rats made hypertensive by the Goldblatt one kidney method showed neither increased AMP stereotypy nor longer HAL catalepsy. The increased effect of AMP in SHR was not due to greater drug accumulation in the brain. These findings are discussed in terms of altered brain catecholamine metabolism in SHR, and are related to experiments of chronic stress and the sensitization of AMP's effects. 34 references. (Author abstract modified)

002892 Shumilina, A. I.; Zhuravlev, B. V.; Orbachevskaya, I. Yu. Institut normal'noy fiziologii im. P. K. Anokhina AMN SSSR, Moskva, USSR **/On correlation of behavioral reactions and neuronal activity in the hypothalamus under subcutaneous gastrin injection./** O korrelyatsii povedencheskikh reaktsiy i neyronnoy aktivnosti gipotalamusa pri podkozhnom vvedenii gastrina. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(6):1298-1301, 1980.

The correlation of behavioral reactions and neuronal activity in the hypothalamus under subcutaneous gastrin injection was studied in two series of experiments on rabbits weighing 3 to 3.5 kg, some of which had been deprived of food for 24 hours and others of which had been fed. The animals were placed in a special chamber. In the first series of experiments their movements were restricted, but in the second series they were allowed free behavior. Pentagastrin (0.02mg/kg) was injected into the animals subcutaneously. In the course of 2 to 3 minutes the initial extracellular activity of the lateral hypothalamus was measured using glass microelectrodes. It was intensified and recorded on a magnetic tape. In the second series of experiments, pentagastrin

was injected, and the activity of the same neuron was recorded during the course of 30 to 40 minutes. Results show that gastrointestinal hormones participate in the regulation of the functional system which supports the optimal level of nutritional substances in the blood. 9 references.

002893 Sieghart, W.; Placheta, P.; Supavilai, P.; Karobath, M. Psychiatrische Universitatsklinik, A-1090 Vienna, Austria **GABA receptor associated drug receptors.** Advances in Biochemical Psychopharmacology. 26:121-128, 1981.

Evidence for the molecular and pharmacological heterogeneity of the GABA/benzodiazepine receptor complex is reviewed. At least two types of GABA/benzodiazepine receptor complexes appear to exist which differ with respect to the benzodiazepine binding protein. One type of complex which contains the benzodiazepine protein P51 occurs in all brain regions. Another receptor complex contains the benzodiazepine binding protein P55 and is found in the hippocampus and other brain regions, but not in the cerebellum. This molecular heterogeneity of benzodiazepine binding proteins may be the cause of the observed differences in the modulation by GABA and pyrazolopyridines of benzodiazepine receptor binding in the cerebellum and hippocampus. Alternatively, additional differences in the molecular properties of the GABA or pyrazolopyridine recognition sites or differences in the mode of coupling of the various constituents of the receptor complex might explain the observed regional pharmacological heterogeneity of the GABA/benzodiazepine receptor complexes. 16 references.

002894 Sillito, Adam M.; Kemp, John A.; Milson, James A.; Berardi, Nicoletta. Dept. of Physiology, Medical School, Birmingham B15 2TJ, England **A re-evaluation of the mechanisms underlying simple cell orientation selectivity.** Brain Research. 194(2):517-520, 1980.

The orientation selectivity of simple cells in the cat visual cortex was lost when the GABA antagonist N-methyl bicuculline was applied iontophoretically. Receptive field dimensions were compatible with those expected from a single dorsal lateral geniculate input. Results suggest that simple cell orientation selectivity is due to the operation of an intracortical inhibitory mechanism rather than to asymmetries in excitatory input. 13 references. (Author abstract modified)

002895 Singer, Leonard; Imbs, Jean-Louis; Danion, Jean-Marie; Schmidt, Mariette; Sebban, Miryam. Centre Hospitalier Universitaire de Strasbourg, 1, place de l'hopital, F-67091 Strasbourg Cedex, France **/Influence of psychotropic drugs on the urinary elimination of lithium./** Influence des psychotropes sur l'elimination urinaire du lithium. Psychologie Medicale. 12(11):2345-2349, 1980.

The effects of psychotropic drugs on the urinary elimination of lithium were studied in the rat. The Ss were divided into two groups, control and experimental. Ss in the experimental group were administered one of four psychotropic drugs: chlorpromazine (5.7mg/kg/day), haloperidol (0.5mg/kg/day), clomipramine (2.5mg/kg/day), and carpipramine (10mg/kg/day), each for 5 days. Results indicate that the administration of chlorpromazine, haloperidol, and, to a lesser degree, clomipramine decreased tubular reabsorption of lithium. Carpipramine tended to increase tubular reabsorption of lithium and increased lithium plasma levels. These data demonstrate that lithium plasma levels must be checked when major tranquilizers or antidepressant drugs are administered to patients treated with lithium. 15 references. (Journal abstract modified)

002896 Skolnick, P.; Moncada, V.; Barker, J. L.; Paul, S. M. Lab. of Bioorganic Chemistry, National Institute of Arthritis, Metabolism and Digestive Disease, NIH, Bethesda, MD 20205 **Pentobarbital: dual actions to increase brain benzodiazepine receptor affinity.** Science. 211(4489):1448-1450, 1981.

The binding of (3H)diazepam to benzodiazepine receptors was studied in extensively washed membranes of rat cerebral cortex in the presence of the depressant barbiturate, pentobarbital. Pentobarbital, like the endogenous neurotransmitter GABA, increased the basal binding and also potentiated the GABA enhanced binding of (3H)diazepam to benzodiazepine receptors by increasing the apparent affinity of (3H)diazepam for the benzodiazepine receptors. The concentrations of pentobarbital necessary to elicit these effects in vitro were the same as those observed after treatment with pharmacologically relevant doses, suggesting that a common neurochemical association may exist between these two types of compounds. 16 references. (Author abstract)

002897 Smith, C. C. T.; Bradford, H. F.; Thompson, E. J.; MacDermot, J. Bradford: Dept. of Biochemistry, Imperial College, London SW7 2AZ, England **Actions of beta-bungarotoxin on amino acid transmitter release.** Journal of Neurochemistry. 34(3):487-494, 1980.

The effects of purified beta-bungarotoxin (5 or 10mcg/ml) on the metabolic and transmitter releasing properties of female Sprague-Dawley rat cortical synaptosomes were studied. The toxin stimulated control respiratory rates, but blocked the respiratory response to veratridine. Potassium levels were greatly reduced (54%). Release of endogenous glutamate, aspartate, and GABA was increased. The toxin inhibited the uptake of (U-14C)GABA by 35% and that of (U-14C)glutamate by 53%; this uptake inhibition was calcium dependent and was reduced by tetrodotoxin. The toxin also had a depolarizing effect at the locus neuromuscular junction. 24 references. (Author abstract modified)

002898 Smith, Craig P.; Ellis, Daniel B.; Meyerson, Laurence R. Dept. of Biochemistry, Hoechst-Roussel Pharmaceuticals, Inc., Route 202-206 North Somerville, NJ 08876 **Dopaminergic agonist and antagonist effects on striatal tyrosine hydroxylase distribution.** Life Sciences. 28(2):193-197, 1981.

Dopaminergic agonist and antagonist effects on striatal tyrosine hydroxylase (TH) distribution were investigated. Rats were decapitated 1 hour after either haloperidol or 30 min after apomorphine in the presence or absence of pyrogallol pretreatment. Subcellular fractions were prepared from striatal tissue, and L-DOPA formation was measured using reverse phase, paired ion high performance liquid chromatography with electrochemical detection. Results indicate that the in vivo administration of haloperidol, but not apomorphine, shifts the subcellular distribution of striatal TH activity. This shift occurred from the cytosol fraction to the crude mitochondrial fraction. No shift in TH activity was observed within the crude synaptosomal fraction after either drug. It is suggested that the ability of haloperidol to increase dopaminergic activity in vivo is associated with a shift in striatal TH activity distribution. 20 references. (Author abstract modified)

002899 Smith, Stephen A.; Pogson, Christopher I. Beecham Pharmaceuticals, Biosciences Research Centre, Great Burgh, Yew Tree Bottom Road, Epsom, Surrey KT18 5XQ, England **Effects of benserazide and carbidopa on the metabolism of L-tryptophan by isolated rat liver cells.** Biochemical Pharmacology. 30(6):623-628, 1981.

The effects of two inhibitors of aromatic amino acid decarboxylase, benserazide and carbidopa, on the metabolism of L-tryptophan by liver cells prepared from 48 hours starved rats was studied. Tryptophan 2,3-dioxygenase (pyrrolase) and kynur-

eninase activities were determined simultaneously using L-(ring 2-14C), L-(carboxyl-14C), and L-(methylene-14C)tryptophan. In hepatocytes incubated with a low physiological concentration of tryptophan, carbidopa produced a significant inhibition of kynureninase activity. The effects of benserazide were similar, but benserazide appears less potent. Neither compound influences pyruvate oxidation. Implications of these data for the research literature concerning the in vivo oxidation of tryptophan by benserazide and carbidopa are discussed. 18 references. (Author abstract modified)

002900 Sokoloff, P.; Martres, M. P.; Schwartz, J. C. Unite 109 de Neurobiologie, Centre Paul Broca de l'INSERM, 2ter, rue d'Alesia, F-75014 Paris, France **Three classes of dopamine receptor (D-2, D-3, D-4) identified by binding studies with 3H-apomorphine and 3H-domperidone.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2):89-102, 1980.

Two radioligands, 3H-apomorphine and 3H-domperidone, were used to study dopamine receptor subtypes in homogenates from male Sprague-Dawley rat brain. Binding sites were analyzed for drug specificity, localization, and sensitivity to guanosine triphosphate and to thermal denaturation. Results demonstrated the presence of three distinct classes of dopamine receptor in striatum and nonstriatal regions. These receptor types (D-2, D-3, and D-4) all differed from the recognition moiety of dopamine sensitive adenylate cyclase (D-1 receptor). 67 references. (Author abstract modified)

002901 Spear, Linda Patia. Department of Psychology, State University of New York at Binghamton, Binghamton, NY 13901 **A psychopharmacological approach to memory processing.** In: Thompson, R., Neural mechanisms of goal-directed behavior & learning. New York, Academic Press, 1980. 639 p. (p. 425-435).

The problem of the physiological basis of synaptic plasticity is approached from a psychopharmacological perspective. Autoreceptor hyposensitization may develop normally as a consequence of repeated utilization of synapses. Such a process may constitute a simple mechansim for stabilization of neuronal circuits repetitively activated during a learning situation. Alterations that occur at the synaptic level after chronic drug administration may be a model with which to investigate biological substrates of learning and memory processes. Chronic amphetamine administration during the retention interval seems to enhance the retention of adult rats, but not perhaps that of weanling rats whose synaptic modulatory devices are not yet mature. Use of such a psychopharmacological model in combination with neurochemical approaches may be helpful in investigations of the biological bases of learning and retention. 45 references.

002902 Speth, Robert C.; Bresolin, Nereo; Mimaki, Takashi; Deshmukh, Pushpa P.; Yamamura, Henry I. Dept. of Pharmacology and Psychiatry, University of Arizona Health Sciences Center, Tucson, AZ 85724 **Neuronal localization of benzodiazepine receptors in the murine cerebellum.** Advances in Biochemical Psychopharmacology. 26:27-39, 1981.

The localization of benzodiazepine receptors in the mouse cerebellum in the staggerer and weaver mutant mouse strains is described. Selective genetic and chemical lesions which affect specific neuronal populations in the cerebellum were studied for changes in benzodiazepine receptors. Destruction of cerebellar climbing fibers with 3-acetylpyridine, did not affect cerebellar benzodiazepine receptors. Destruction of Purkinje, basket, and stellate cells with intracerebellar kainic acid caused moderate decreases in benzodiazepine receptor density. Destruction of Purkinje cells with chronic high doses of phenytoin also caused a significant decrease in benzodiazepine receptor density. In weaver mice, benzodiazepine receptor density was unchanged, while the absolute number of benzodiazepine receptors decreased by 57%. In staggerer mice, there was a 45% decrease in benzodiazepine receptor density and a 90% decrease in the absolute number of benzodiazepine receptors. Results suggest that benzodiazepine receptors exist on cerebellar Purkinje cells, that they probably also occur on cerebellar granule cells, and that they do not appear to be present on cerebellar glial cells or on climbing fibers. 31 references. (Author abstract modified)

002903 Squires, Richard F. Rockland Research Institute, Orangeburg, NY 10962 **GABA receptors regulate the affinities of anions required for brain specific benzodiazepine binding.** Advances in Biochemical Psychopharmacology. 26:129-138, 1981.

A series of studies suggesting that GABA receptors regulate the affinities of the anions required for brain specific benzodiazepine binding is described. It is noted that beta-carboline-3-carboxylate methyl ester (BCME) discriminates between different benzodiazepine/ion/GABA receptor complexes. The available evidence suggests that there are more than two such receptor complexes. The pervasive effects of GABA mimetics on anion dependent 3H-flunitrazepam binding suggests that virtually all benzodiazepine receptors are coupled to GABA receptors. This conclusion is also supported by light microscopic autoradiographical localization of 3H-muscimol and 3H-flunitrazepam binding sites, and these studies also suggest that many GABA receptors are not coupled to benzodiazepine receptors. 24 references.

002904 Steinhauer, Hjalmar B.; Hertting, Georg. Dept. of Internal Medicine IV, University of Freiburg, D-7800 Freiburg i.Br., West Germany **Lowering of the convulsive threshold by non-steroidal anti-inflammatory drugs.** European Journal of Pharmacology. 69(2):199-203, 1981.

Nonsteroidal antiinflammatory drugs altered the convulsant threshold for pentetrazol in male NMRI mice by inhibiting cerebral synthesis of prostaglandins (PG) or thrombaxone (TX). The increases in brain PGE2, PGF2alpha, and TXB2 induced by convulsant doses of pentetrazol were inhibited by indomethacin, flurbiprofen, and diclofenac. These drugs also lowered the median lethal does (LD50) for pentetrazol and accelerated the onset of tonic seizures after pentetrazol. Ibuprofen in a submaximamly effective dose also significantly inhibited cerebral arachidonic acid metabolism and lowered the LD50 for pentetrazol. Aspirin and paracetemol were inactive in vivo. 18 references. (Author abstract modified)

002905 Sterman, Arnold B.; Spencer, Peter S. Spencer: Institute of Neurotoxicology, Dept. of Neurosciences, Albert Einstein College of Medicine, Bronx, NY 10461 **The pathogenesis of primary internodal demyelination produced by acetyl ethyl tetramethyl tetralin: evidence for preserved Schwann cell somal function.** Journal of Neuropathology and Experimental Neurology. 40(2):112-122, 1981.

The pathogenesis of primary internodal peripheral nervous system demyelination produced by acetyl ethyl tetramethyl tetralin (AETT) was studied in subchronically intoxicated rats with intact sciatic nerves (right side) and focally traumatized nerves (left side) undergoing myeline breakdown and repair. At 6 weeks and prior to onset of demyelination, Sprague-Dawley rats (n=16) treated with 50mg/kg/day AETT, dissolved in ethanol and mixed with food, showed an increase in the number of visible Schmidt-Lanterman incisures per internode of large diameter fibers in tibial nerves. By 10 weeks, the same group of fibers had begun to develop juxtanodal and internodal myelin bubbles. Subsequently, intramyelinic phagocytes of hematogenous derivation removed entire internodes of endematous myelin. A comparison of AETT treated animals and controls subjected to left hindlimb surgery indicates that responses to

nerve injury were quantitatively similar for experimentals and controls at 1 to 16 weeks of AETT treatment. These results are compatible with the view that AETT damages myelin directly, that Schwann cell somal functions are not seriously affected by AETT, and that Schmidt-Lanterman incisures undergo changes prior to demyelination, which may represent a physiological response of the Schwann cell to toxic attack on this myelin sheath. In concert, findings challenge the view that primary internodal demyelination is necessarily indicative of metabolic dysfunction of the Schwann cell soma. 23 references. (Author abstract modified)

002906 Stewart, Jane; Eikelboom, Roelof. Dept. Psychology, Concordia University, 1455 de Maisonneuve Blvd., Montreal, Quebec, Canada H3G 1M8 **Interaction between the effects of stress and morphine on body temperature in rats.** Life Sciences. 28(9):1041-1045, 1981.

The relation between stress induced and morphine induced body temperature changes was examined in rats. Three groups of eight animals thoroughly habituated to handling and rectal probing, and three groups of eight experimentally naive animals were injected intraperitoneally with either 1, 5, or 30mg/kg morphine sulphate on each of 6 consecutive days. Differences in temperature readings from the preinjection baseline show that on Day 1 of the experiment, stress acted to effectively increase the potency of morphine, causing slightly increased hyperthermia at the lowest dose and greatly increased hypothermia at the highest dose. By Day 6, the differences between habituated and nonhabituated animals had disappeared. Results are discussed in terms of the interaction between the temperature changes produced by endogenous opioids in stressed animals and the actions of exogenously administered morphine. 13 references. (Author abstract modified)

002907 Stone, T. W.; Hollins, Carolyn; Lloyd, Hilary. Dept. of Physiology, St. Georges Hospital Medical School, University of London, London SW17 ORE, England **Methylxanthines modulate adenosine release from slices of cerebral cortex.** Brain Research. 207(2):421-431, 1981.

Factors affecting the release of adenosine, adenine, and GABA (including the influence of methylxanthines) were investigated in slices of mouse or rat cerebral cortex incubated with (3H)adenosine or (3H)adenine and/or (14C)GABA. Although release of purines and GABA could be induced by ouabain, or p-hydroxymercuribenzoate, no release was produced by ethacrynic acid, noradrenaline, or SC 13504. Therefore, release is probably not related to (Na,K) adenosine triphosphatase (ATPase) or Mg2-ATPase inhibition. Caffeine, theophylline, aminophylline, and isobutyl-methylxanthine markedly depressed the release of purines evoked by ouabain. Nonxanthine inhibition of phosphodiesterase had much weaker though statistically significant effects. The methylxanthines had no significant effect on GABA release. It is suggested that the results can be explained on the basis of a positive feedback system in which released adenosine activates membranal adenylate cyclase, and the increased concentration of cyclic AMP which forms the origin of much of the adenosine released subsequently. However, the existence of an intracellular receptor for methylxanthines which directly causes the inhibition of purine release cannot be excluded. 50 references. (Author abstract modified)

002908 Sugrue, Michael F. Centre de Recherche Merrell International, 16, rue d'Ankara, F-67084 Strasbourg Cedex, France **Effects of acutely and chronically administered antidepressants on the clonidine-induced decrease in rat brain 3-methoxy-4-hydroxyphenylethyleneglycol sulphate content.** Life Sciences. 28(4):377-384, 1981.

The effects of acutely and chronically administered antidepressants on the clonidine induced decrease in rat brain 3-methoxy-4-hydroxyphenylethyleneglycol sulphate (MHPG-SO4) content were investigated. Acutely administered mianserin increased rat brain MHPG-SO4 levels and prevented the clonidine induced reduction. The clonidine induced fall in MHPG-SO4 level was also absent following the acute administration of desipramine or nisoxetine. Chronic mianserin and nisoxetine increased MHPG-SO4 levels. Only chronic desopramine blocked the clonidine induced fall, the phenomenon developing between 5 and 9 days of chronic treatment. Results indicate that the ability of chronic desipramine to elicit subsensitivity of presynaptic alpha-adrenoceptors does not extend to the other four agents studied. 45 references. (Author abstract modified)

002909 Supavilai, Porntip; Karobath, Manfred. Karobath: Dept. of Biochemical Psychiatry, Psychiatrische Universitatsklinik, Lazarettgasse 14, A-1090 Vienna, Austria **Action of pyrazolopyridines as modulators of (3H)flunitrazepam binding to the GABA/benzodiazepine receptor complex of the cerebellum.** European Journal of Pharmacology. 70(2):183-193, 1981.

The pyrazolopyridines etazolate and cartazolate directly stimulated 3H-flunitrazepam binding to male Sprague-Dawley rat cerebellar membranes by increasing the apparent affinity of 3H-flunitrazepam for its binding sites. The stimulation was dependent on the presence of chloride, bromide, iodide, nitrite, and nitrate, but not on fluoride, acetate, formate, or sulfate. The stimulation was inhibited by bicuculline methiodide and by chloride channel drugs such as picrotoxin. The pyrazolopyridines also indirectly affected benzodiazepine receptor binding by enhancing the apparent sensitivity of GABA recognition sites coupled to benzodiazepine binding sites: this sensitization was partially dependent on the presence of chloride ions. Results suggest that the pyrazolopyridines modulate 3H-flunitrazepam binding by acting at a site closely related to GABA receptor regulated chloride ion channels. 33 references. (Author abstract modified)

002910 Swann, Alan C.; Crawley, Jacqueline N.; Grant, Steven J.; Maas, James W. Yale University School of Medicine, Dept. of Psychiatry, 333 Cedar Street, New Haven, CT **Noradrenergic stimulation in vivo increases (Na, K)-adenosine triphosphatase activity.** Life Sciences. 28(3):251-256, 1981.

To evaluate the role of norepinephrine in regulating activity of (Na, K) adenosine triphosphatase in vivo, enzyme activity was measured in rat brain after electrical stimulation of the locus coeruleus and after administration of piperoxane. Both treatments resulted in increased (Na, K) adenosine triphosphatase activity in locus coeruleus projection areas, but not in corpus striatum. The increased activity was limited to the same side as the stimulating electrode. Destruction of noradrenergic fibers from the locus coeruleus with 6-hydroxydopamine prevented the increase in enzyme activity with piperoxane. 46 references. (Author abstract modified)

002911 Swann, Alan C.; Heninger, George R.; Roth, Robert H.; Maas, James W. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical School, P.O. Box 20708, Houston, TX 77025 **Differential effects of short and long term lithium on tryptophan uptake and serotonergic function in cat brain.** Life Sciences. 28(4):347-354, 1981

The effects of short-term and longterm lithium treatment on tryptophan uptake and on tissue levels of the serotonin metabolite 5-hydroxyindoleacetic acid (5-HIAA) were studied in 12 brain regions of the cat. Tryptophan uptake and 5-HIAA were significantly correlated in control cats. Short-term treatment caused parallel increases or decreases in tryptophan uptake and 5-HIAA. Long-term treatment consistently increased tryptophan

uptake without corresponding changes in 5-HIAA. Relatively low cumulative doses of lithium may reduce the degreee to which tryptophan uptake is a limiting factor in the regulation of serotonin synthesis. 29 references. (Author abstract)

002912 Tallman, John F.; Mallorga, Pierre; Thomas, John W.; Gallager, Dorothy W. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Benzodiazepine binding sites: properties and modulation.** Advances in Biochemical Psychopharmacology. 26:9-18, 1981.

Recent investigations into the nature of changes in benzodiazepine binding elicited by pharmacological agents are reviewed, and the issues of multiple receptors are discussed. Studies indicate that GABA receptors and the central benzodiazepine binding closely interact in the membrane, and affinity changes may determine the ability of the system to function. Alterations in the number of benzodiazepine sites may also be of great importance in determining the magnitude of the GABA response or set point of response of the GABA system. Central benzodiazepine binding sites differ from peripheral sites and there may be several central sites. At least in the membrane, all of the central benzodiazepine binding sites may not be normally exposed. From the covalent labeling experiments with (3H)flunitrazepam and the simultaneous experiment with nonradioactive flunitrazepam, the binding sites for benzodiazepines, at least in the membrane, can probably interact with each other as well as with the GABA receptors. This may indicate a complex of several benzodiazepine sites together in the membrane with a GABA recognition unit and an ion channel. 48 references. (Author abstract modified)

002913 Tanaka, Shokichi; Tsujimoto, Akira. Dept. of Pharmacology, Hiroshima University, School of Dentistry, Hiroshima, Japan **Somatostatin facilitates the serotonin release from rat cerebral cortex, hippocampus, and hypothalamus slices.** Brain Research. 208(1):219-222, 1981.

The effect of somatostatin on the release of serotonin (5-HT) from the superfused slices of rat cerebral cortex, hippocampus, and hypothalamus preloaded with (3H)5-HT was examined. Somatostatin was found to facilitate dose dependently the electrically stimulated or high K stimulated release of (3H)5-HT. The order, from the greatest to least, of the stimulatory potency of somatostatin on the evoked release in the three areas of the brain was cortex, hippocampus, then hypothalamus. This report is the first direct evidence that somatostatin stimulates the release of serotonin, a putative transmitter in the CNS. 13 references. (Author abstract modified)

002914 Tang, Siu Wa; Seeman, Philip; Kwan, Sing. Psychopharmacology Unit, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada M5T 1R8 **Differential effect of chronic desipramine and amitriptyline treatment on rat brain adrenergic and serotonergic receptors.** Psychiatry Research. 4(2):129-138, 1981.

Serotonergic and adrenergic receptors were examined in rat brains by direct binding assays after chronic treatment with tricyclic antidepressants. Chronic amitriptyline (AMT) treatment (10mg/kg/day intraperitoneally for 21 days) decreased specific 3H-spiperone binding in the cortex and not in caudate nuclei. Specific 3H-dihydroalprenolol (3H-DHA) binding was reduced in cerebellar but not in cerebral cortex. Chronic desipramine (DMI) treatment given in the same dose schedule, on the other hand, decreased specific 3H-DHA binding in both cerebellar and cerebral cortex. Specific 3H-spiperone binding in the cerebral cortex was also reduced, but to a lesser extent than that in the AMT treated group. Scatchard analysis shows that reductions in 3H-spiperone or 3H-DHA binding in all cases were due to decreases in the number of binding sites (Bmax) and not to changes in dissociation constants (KD). No change was observed in 3H-serotonin, 3H-clonidine, or 3H-WB-4101 binding. The results show that there is no single common change in brain adrenergic and serotonergic receptors after chronic AMT and DMI treatment. 34 references. (Author abstract)

002915 Tenen, S. S.; Hirsch, James D. Dept. of Biological Research, G. D. Searle & Co., P.O. Box 5110, Chicago, IL 60680 **Beta-carboline-3-carboxylic acid ethyl ester antagonizes diazepam activity.** Nature. 288(5791):609-610, 1980.

The antagonism of diazepam activity by beta-carboline-3-carboxylic acid ethyl ester (beta-CEE) is described. The 50% protective dose of diazepam against pentylenetetrazole (PTZ) induced clonic seizures in mice was determined in mice pretreated with either normal saline or beta-CEE at 3.2, 10, or 32mg/kg. Pretreatment with beta-CEE produced a clear and pronounced dose responsive increase in the 50% protective dose of diazepam against PTZ induced clonic convulsions. In addition to confirming previous reports that beta-CEE is a potent displacer of 3H-diazepam, the data indicate that beta-CEE has activity that is opposite to, rather than similar to, that of diazepam. 13 references. (Author abstract modified)

002916 Thompson, Richard F.; Berger, Theodore W.; Berry, Stephen D. Department of Psychobiology, University of California, Irvine, CA 92717 **Brain mechanisms of learning.** In: Thompson, R., Neural mechansims of goal-directed behavior & learning. New York, Academic Press, 1980. 639 p. (p. 221-239).

In the classical conditioning of learning paradigm developed by Gormezano, the growth of the hippocampal unit response is shown to be completely predictive of subsequential behavioral learning. If the hippocampal response does not develop, the animal will not learn. If it develops rapidly, the animal will learn rapidly. If it develops slowly, the animal will learn slowly. The hippocampal response develops within the first few trials of training and is projected to other brain structures. The response appears to be generated primarily by pyramidal neurons. Finally, the temporal form of the hippocampal unit response predicts the temporal form of the behavioral response; it forms a temporal model of the learned behavioral response. In the context of goal-directed behavior, the hippocampus may function as a portion of the basic brain system that seems to code the goal-directed or salient aspects of the stimulus world in relation to adaptive behavior. 45 references.

002917 Tissot, R. Clinique psychiatrique de Geneve, CH-1225 Chene-Bourg, Switzerland **/Opiate receptors and sleep. II. Effects of microinjections of ethyl alcohol and pentobarbital in the median thalamus, periaqueductal gray matter and nucleus of the tractus solitarius of the rabbit./** Recepteurs de l'opium et sommeil: II. Effets de micro-injections d'alcool ethylique et de pentobarbital dans le thalamus median, la substance grise centrale periaqueducale et du noyau du tractus solitaire du lapin. Neuropsychobiology. 7(2):74-86, 1981.

The effects of microinjections of ethyl alcohol and pentobarbital in the median thalamus, periaqueductal gray matter, and nucleus of the tractus solitarius of the rabbit on EEGs and sleep were investigated. Like morphine, microinjections of optimal equimolar doses of ethyl alcohol and pentobarbital in the bulbo/mesencephalo/thalamic sleep inducing system of the rabbit produced sleep EEGs with abundant fast activity, which was blocked by naloxone. However, there is neither binding nor displacement by naloxone of ethyl alcohol or pentobarbital from the opiate receptor. It is speculated that ethyl alcohol and pentobarbital promote the release of endorphins or peptides which

are specific ligands of all or some opiate receptors. 76 references. (Author abstract modified)

002918 Tollefson, Gary Dennis. University of Minnesota **A comparison of human muscarinic cholinergic receptor response to a number of psychotropics utilizing the radiolabeled antagonist, (3H)-quinuclidinyl benzilate. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2557-B, 1981. Ann Arbor, Univ. Microfilms No. 8102184, 97p., 1980.

The muscarinic cholinergic receptor in the human caudate was compared to that in the erythrocyte when subject to classical binding analysis and in the presence of a number of contemporary psychotropics (competitive displacement of specific binding). In both systems a specific, saturable, high affinitey site was described by saturation isotherm and in general agreement with other tissue sites. The differing affinities between the erythrocyte and caudate utilizing (3H)-quinuclidinyl benzilate (QNB) could imply two autonomous receptors or they may represent an identical receptor. Because of the strikingly similar relative affinities in both systems for a number of psychotropics, it would appear that the peripheral erythrocyte may offer an assessible parameter for the clinical study of central cholinopathic states. Results affirmed the considerable anticholinergic activity, as evidenced by competitive receptor affinity, for a number of contemporary psychotropics. Rank ordering indicates: dimethylated tricyclics are stronger anticholinergics than monomethylates in human tissue, both the tetracyclic antidepressant mianserin and the MAOI tranylcypromine are less competitive than the TCA's at the muscarinic receptor, and an inverse relationship between propensity to elicit extrapyramidal reactions (EPS) and displacement of high affinity binding sites exists. Explanations for agonist binding at a lower affinity than antagonist binding are offered. (Journal abstract modified)

002919 Torda, Tichomir; Yamaguchi, Isamu; Hirata, Fusao; Kopin, Irwin J.; Axelrod, Julius. Kopin: Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Mepacrine treatment prevents immobilization-induced desensitization of beta-adrenergic receptors in rat hypothalamus and brain stem.** Brain Research. 205(2):441-444, 1981.

Mepacrine treatment was found to prevent immobilization induced desensitization of beta-adrenergic receptors in rat hypothalamus and brainstem. Fewer beta-adrenoceptors were found in the hypothalamus and brainstem of rats subjected to repeated immobilization. Mepacrine treatment alone did not affect the number of beta-adrenergic receptors but prevented the stress induced decrease in beta-adrenoceptor density in the hypothalamus and brainstem. Mepacrine treatment resulted in a decrease in apparent Kd of the adrenoceptors in both areas of brain of unstressed, as well as stressed rats, whereas stress alone had no significant effect on affinity of the beta-receptors. Repeated immobilization stress increased alpha-2-adrenoceptors in the brainstem. 16 references.

002920 Tsujimoto, Akira; Tanaka, Shokichi. Dept. of Pharmacology, Hiroshima University School of Dentistry, Hiroshima, Japan **Stimulatory effect of somatostatin on norepinephrine release from rat brain cortex slices.** Life Sciences. 28(8):903-910, 1981.

The effect of somatostatin (SRIF) on norepinephrine (NE) release from brain tissue was determined on the superfused rat cerebral cortex slices preloaded with 3H-NE. SRIF was found to stimulate tritium (3H) overflow evoked electrically by 30% to 116%, although SRIF did not affect spontaneous 3H overflow. SRIF at concentrations which exhibited the stimulatory effect, barely inhibited the uptake of 3H-NE by cortex slices, while the reference drug, cocaine, markedly depressed the uptake. The stimulatory effect of SRIF was not reduced by phentolamine, an alpha-adrenoceptor blocker, which increased the evoked 3H overflow from the slices itself. These results suggest that SRIF does not produce its stimulatory effect by inhibiting the NE reuptake mechanisms or by interacting with the presynaptic alpha-adrenoceptors. Elevating Ca2 concentrations from 0.75mM to 2.25 mM in the superfusion fluid reduced the stimulatory effect of SRIF. It is possble that SRIF stimulates NE release by facilitating the availability of Ca2 for the release mechanisms. 24 references. (Author abstract modified)

002921 Turski, Lechoslaw; Turski, Waldemar; Czuczwar, Stanislaw J.; Kleinrok, Zdzislaw. Dept. of Pharmacology, Institute of Clinical Pathology, Medical School, Jaczewskiego 8, PL-20-090 Lublin, Poland **Effects of morphine and nalorphine on kainic acid-induced hypothermia in rats.** Psychopharmacology. 72(2):211-214, 1981.

The effects of morphine and nalorphine on kainic acid (KA) induced hypothermia in rats were investigated. Intraventricular administration of KA at the dose of 0.1mcg induced a significant depression followed rapidly by a slight elevation of rectal temperature. Morphine, which by itself elicits biphasic effect on the body temperature of rats (initially hypothermia followed by hyperthermia), slightly increased the KA induced hypothermia. Kainic acid did not cause any changes in the hyperthermic effect of low doses of morphine. Pretreatment of rats with nalorphine enhanced the kainic acid induced hypothermia. On the contrary, nalorphine reversed the hypothermic effect produced by morphine. Results suggest that morphine induced hypothermia and KA induced hypothermia are not mediated by the influence on the same type of receptors. 13 references. (Author abstract modified)

002922 Usdin, Ted B.; Creese, Ian; Snyder, Solomon H. Snyder: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Regulation by cations of (3H)spiroperidol binding associated with dopamine receptors of rat brain.** Journal of Neurochemistry. 34(3):669-676, 1980.

Monovalent and divalent cations, as well as several chelating agents, increased the number of (3H)spiroperidol binding sites in rat corpus striata. Maganese was most potent, enhancing binding at a 1 mcM concentration; magnesium and calcium were at least two orders of magnitude less potent, and sodium, potassium, and lithium were still weaker. Divalent cations enhanced the potency of dopaminergic agonists in competing for (3H)spiroperidol binding, and this effect was independent of the ionic augmentation of (3H)spiroperidol binding. Divalent cations increased the association and dissociation rates of (3H)spiroperidol binding to dopamine receptor sites. 33 references. (Author abstract modified)

002923 van der Heyden, J. A. M.; Venema, K.; Korf, J. Dept. of Pharmacology, Philips Duphar B. V., C. J. van Houtenlaan 36, 1381 CP Weesp, The Netherlands **Biphasic and opposite effects of dopamine and apomorphine on endogenous GABA release in the rat substantia nigra.** Journal of Neurochemistry. 34(1):119-125, 1980.

A push/pull cannula technique was used to study the effects of dopamine (DA) and apomorphine on endogenous GABA release in the substantia nigra of Wistar rats. A 10mcM concentration of DA in the perfusion medium increased GABA release, whereas 50mcM DA decreased GABA release. Apomorphine at 10mcM decreased GABA release, but at 25mcM produced opposite effects. Haloperidol blocked the inhibitory effect of 25mcM DA and the excitatory effect of 100mcM apomorphine. Dibutyryl cyclic AMP and 2-amino-6,7-

dihydroxyl(1,2,3,4)tetrahydronapthalene inhibited nigral GABA release. Results suggest that dopaminergic processes in the substantia nigra affect GABA mediated neurotransmission. 65 references. (Author abstract modified)

002924 Van Loon, Glen R.; Appel, Nathan M. Dept. of Medicine, Medical Sciences Bldg., University of Toronto, Ontario M5S 1A8, Canada **Beta-endorphin-induced hyperglycemia is mediated by increased central sympathetic outflow to adrenal medulla.** Brain Research. 204(1):236-241, 1981.

The mediation of beta-endorphin induced hyperglycemia by increased central sympathetic outflow to adrenal medulla is described. Synthetic human beta-endorphin increased plasma glucose concentration when administered intracisternally in chronically cannulated, conscious, unrestrained, adult male rats. This hyperglycemic effect of beta-endorphin was blocked by prior systemic administration of naloxone, supporting mediation of the effect at opioid receptors in brain. Adrenal denervation blocked the beta-endorphin induced increase in plasma glucose, supporting a thesis that this effect is mediated at least in part by increased epinephrine secretion. The hyperglycemic response to intracerebral beta-endorphin was also blocked by either intracerebral hemicholinium 3 or somatostatin, supporting both a cholinergic link and a somatostatin neuron in the brain mechanisms regulating endorphin induced stimulation of sympathetic outflow. 23 references. (Author abstract modified)

002925 Voltattorni, Carla Borri; Minelli, Alba; Borri, Piero. Institute of Biological Chemistry, Faculty of Pharmacy, University of Perugia, I-06100 Perugia, Italy **The interaction of 2,3,4-trihydroxybenzylhydrazine with dopa decarboxylase from pig kidney.** Life Sciences. 28(1):103-108, 1981.

The interaction of 2,3,4-trihydroxybenzylhydrazine (Ro 4-5127) with dopa decarboxylase from pig kidney was investigated. The spectral modifications induced by addition of Ro 4-5127 to dopa decarboxylase indicate the binding of this compound to the coenzyme binding sites and allow the titration of the enzyme. Inhibition data indicate that Ro 4-5127 behaves as a pseudoirreversible inhibitory of dopa decarboxylase and that 100% inhibition is not reached at a 1:1 inhibitor/enzyme molar ratio, as expected from spectral data, but at a molar ratio of about 6.0. On this basis it would be possible to suggest, beside the coenzyme binding site, the existence on the enzyme molecule of other sites where the compound could bind without affecting its spectral feature. The interaction of Ro 4-5127 with dopa decarboxylase shows that in vivo Ro 4-5127 behaves as a more powerful inhibitor of dopa decarboxylase than its precursor trihydroxybenzylhydrazine seryl derivative (Ro 4-4602) indicating that the strong in vivo inhibition exerted by Ro 4-4602 might reflect the effective interaction of dopa decarboxylase with Ro 4-5127. 13 references. (Author abstract modified)

002926 Wagner, George C.; Schuster, Charles R.; Seiden, Lewis S. Dept. of Biopsychology, University of Chicago, Chicago, IL 60637 **Neurochemical consequences following administration of CNS stimulants to the neonatal rat.** Pharmacology Biochemistry and Behavior. 14(1):117-119, 1981.

Regional catecholamine levels were determined in the brains of Sprague-Dawley rats treated with methylamphetamine, d-amphetamine, or methylphenidate (12.5, 25, or 50mg/kg/day) from postnatal days 10 to 40. The higher doses of methylamphetamine and d-amphetamine induced long lasting depletions of dopamine in the caudate, but did not alter norepinephrine levels. Methylphenidate had no long-term effect on catecholamine levels. 20 references. (Author abstract modified)

002927 Wallis, Cleatus J.; Luttge, William G. Div. of Pharmacology, M-013, Dept. of Medicine, University of California, San Diego, La Jolla, CA 92093 **Influence of estrogen and progesterone on glutamic acid decarboxylase activity in discrete regions of rat brain.** Journal of Neurochemistry. 34(3):609-613, 1980.

In a study of the effect of steroids on glutamic acid decarboxylase (GAD) activity, ovariectomized Charles River rats were treated with 17beta-estradiol benzoate (1.0mcg/day) or progesterone (500mcg/day) for 3 days. Estradiol benzoate and progesterone were potent inhibitors of GAD activity in the arcuate nucleus, ventromedial hypothalamus, and corticomedial amygdala. Estrogen reduced the maximal velocity of GAD for glutamate as substrate. Combined treatment with estrogen (2 days) and progesterone (1 day) did not reduce GAD activity in ovariectomized animals except in the septum, indicating an interaction of the two hormones at the level of GAD. It is suggested that GAD activity is low under conditions that inhibit luteinizing hormone (LH) secretion, but comparatively high when LH secretion is stimulated. 32 references. (Author abstract modified)

002928 Wang, J.; Pollack, J.; Birnkrandt, D.; Demirian, L.; Gratton, I.; Pierson, R. N., Jr. Pierson: Div. of Nuclear Medicine, St. Luke's Hospital Center, Amsterdam Ave. at 114th St., New York, NY 10025 **Combined effects of alcohol and lithium on body composition in the rat model.** Pharmacology Biochemistry and Behavior. 14(1):41-47, 1981.

Alcohol markedly enhanced lithium (Li) retention in blood and muscle in Sprague-Dawley rats. The exchangeable sodium (Na) space was markedly enlarged by alcohol and Li, alone or in combination, as a result of extensive mobilization of bound bone Na and transfer to intracellular sites. Li was associated with a decreased food and fluid intake, and this effect was enhanced by alcohol. However, the decrease in intake did not result in nutritionally significant deficits; the observed abnormalities in body composition did not result from caloric, protein, potassium, Na, or calcium deficiencies. 27 references. (Author abstract modified)

002929 Williams, Jonathan H.; Azmitia, Efrain C. Azmita: Dept. of Anatomy, Mount Sinai School of Medicine, New York, NY 10029 **Hippocampal serotonin re-uptake and nocturnal locomotor activity after microinjections of 5,7-DHT in the fornix-fimbria.** Brain Research. 207(1):95-107, 1981.

The role of the hippocampal 5-hydroxytryptamine (5-HT) terminals in the control of locomotor activity was investigated by lesioning 5-HT axons in the fimbria with 5,7-dihydroxytryptamine (5,7-DHT). On the 14th to 21st nights after operation, nocturnal locomotor activity of rats was measured in photocell cages. Twenty eight to 30 days after operation, degeneration of 5-HT terminals was assessed by measuring in vitro (3H)5-HT reuptake in slices of dorsal hippocampus, ventral hippocampus, and the septum. For each rat, the levels of dorsal and ventral hippocampal (3H)5-HT reuptake were correlated negatively with the mean nocturnal activity from the seven nights of testing. Levels of dorsal, but not ventral, hippocampal (3H)5-HT reuptake were correlated negatively with the mean nightly decrement of activity. Results indicate that the increase in nocturnal locomotor activity caused by generalized depletion of 5-HT in the brain may be due to disruption of hippocampal 5-HT terminals supplied by the fornix fimbria. 22 references. (Author abstract modified)

002930 Willmore, L. James; Rubin, Jay J. Neurology Service (127) V.A. Medical Center, Gainesville, FL 32602 **Antiperoxidant pretreatment and iron-induced epileptiform discharges in the rat: EEG and histopathologic studies.** Neurology. 31(1):63-69, 1981.

The EEG and histopathologic patterns in animals with recurrent epileptiform discharges induced by intracerebral injection of iron were investigated in Ss receiving and not receiving the antiperoxidants, alpha-tocopherol and selenium. Following injection of aqueous solution of iron salts, the principal metallic ion of whole blood, into rat isocortex, serial EEGs showed that 94% of untreated animals developed epileptiform discharges. Pretreatment with alpha-tocopherol and selenium prevented development of iron induced epileptiform activity in 72% of animals. Histopathologic assessment of serial sections stained with Nissl, hematoxylin, and eosin, and prussian blue showed cavitation, neuronal pyknosis and loss, and astrogliosis in untreated animals. The site of iron injection in animals treated with antiperoxidants contained only an area of neuronal pyknosis. The efficacy of antioxidants in preventing development of iron induced cavitation, gliosis, and epileptiform discharges suggests that peroxidative injury may be important in the development of experimental epilepsy induced by isocortical injection of ferrous chloride. 67 references. (Author abstract modified)

002931 Willner, Paul; Montgomery, Tony. Psychology Dept., City of London Polytechnic, Old Castle St., London E1, England **Neurotransmitters and depression: too much, too little, too unstable -- or not unstable enough?** Trends in NeuroSciences. 3(8):201, 1980.

The modulation of amphetamine induced anorexia in rats by the tricyclic antidepressants desmethylimipramine (DMI) and iprindole was investigated in relation to the issue of whether the net effect of antidepressants is a decrease or an increase in brain noradrenaline (NA). Results suggest that during withdrawal from DMI or iprindole, NA transmission is decreased. However, during drug treatment this effect is exactly offset by the acute, potentiating effects of the drugs. It is concluded that following an initial increase, tricyclic antidepressants return the efficacy of the NA synapse to its status quo ante, with no net increase or decrease. This suggests that the problem in depression is neither too much NA, nor too little. 14 references.

002932 Wolfe, Barry B.; Augustyn, Damian H.; Majocha, Ronald E.; Dibner, Mark D.; Molinoff, Perry B.; Baldessarini, Ross J.; Walton, Kenneth G. Walton: Dept. of Biology, Maharishi International University, Fairfield, IA 52556 **Effects of isoproterenol on the development of beta-adrenergic receptors in brain cell aggregates.** Brain Research. 207(1):174-177, 1981.

The development of binding sites for the beta-adrenergic receptor antagonist (125I)iodohydroxybenzylpindolol in reaggregate cultures of fetal rat brain was investigated. Beta-adrenergic receptor density increased rapidly between 6 and 22 days in culture at which time maximal density was attained. When cultures were grown in the presence of the beta-adrenergic receptor agonist isoproterenol, the development of receptors was inhibited markedly. Cultures also were grown for 15 days in the presence of isoproterenol and then for 7 to 14 days in the absence of isoproterenol. Following the removal of the agonist, binding sites developed, but to only approximately 50% of the density seen in control cultures. 22 references. (Author abstract)

002933 Wu, P. H.; Phillis, J. W.; Bender, A. S. Phillis: Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 **Do benzodiazepines bind at adenosine uptake sites in CNS?** Life Sciences. 28(9):1023-1031, 1981.

A series of known adenosine uptake inhibitors were tested for their ability to inhibit diazepam binding to synaptosomal membranes, and the relationship between diazepam binding sites and adenosine uptake sites was assessed. It is noted that agents which possess benzodiazepine like activities such as CL218,872, zopiclone, and fominoben, and which displace benzodiazepine binding to brain cell membranes are also inhibitors of adenosine uptake into brain synaptosomes. Adenosine uptake inhibitors (dipyridamole, hexobendine, papaverine, 6-(2-hydroxy-5-nitrobenzyl) thioguanosine) which competitively inhibit adenosine uptake, presumably by blocking adenosine binding to its carrier protein, are competitive inhibitors of diazepam binding to the brain membrane receptors. The finding of a pronounced correlation between inhibition of benzodiazepine binding and inhibition of adenosine uptake further supports the proposal that benzodiazepines may exert part of their pharmacological action through the inhibition of adenosine uptake. 42 references. (Author abstract modified)

002934 Wurtman, Richard J.; Magil, Shelia G.; Reinstein, Daniel K. Laboratory of Neuroendocrine Regulation, Dept. of Nutrition and Food Sciences, Massachusetts Institute of Technology, Cambridge, MA 02139 **Piracetam diminishes hippocampal acetylcholine levels in rats.** Life Sciences. 28(10):1091-1093, 1981.

The effect of piracetam on hippocampal acetylcholine (ACh) levels in rats was investigated. Based on previous studies, septohippocampal cholinergic neurons were thought to be involved in certain components of memory. Piracetam administration caused a significant reduction in hippocampal ACh among naive animals, without significantly modifying choline levels. In the dosage range tested (30mg/kg to 300mg/kg) no clear dose/effect relationship was noted. It is speculated that if piracetam actually facilitates hippocampal cholinergic neurotransmission, and if this neurochemical effect is related to its reported action on memory, then it might be possible to amplify its utility by coadministration of piracetam and choline or lecithin. 19 references.

002935 Wuster, Michael; Schulz, Rudiger. Dept. of Neuropharmacology, Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 2, D-8000 Munchen 40, West Germany **Differential effects of potassium on the potency of different opioids in the mouse vas deferens.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2):181-184, 1980.

The effects of potassium on the ability of various opioids to inhibit electrically evoked twitches in the NMRI mouse vas deferens were determined. In general, opioid potency decreased as the concentration of potassium increased. Mu-receptor and delta-receptor agonists were the least sensitive to the effects of potassium; the concentration required to cause half maximal inhibition increased only twofold at 15mM potassium. At this concentration, the dynorphin receptor and kappa-receptor agonists showed up to an eightfold loss of potency and dynorphin1-13 showed a fivefold loss of inhibitory activity. Results suggest that potassium may have a modulatory action on dynorphin receptors and kappa-receptors. 20 references. (Author abstract modified)

002936 Yamamoto, Minoru; Tachikawa, Shiro; Maeno, Hiroo. Central Research Laboratories, Yamanouchi Pharmaceutical Co., Ltd. Azusawa, Itabashi-ku, Tokyo 174, Japan **Evoked potential studies of porcine calcitonin in rabbits.** Neuropharmacology. 20(1):83-86, 1981.

The effects of porcine calcitonin on evoked potentials of rabbits to painful stimuli were examined. The development of the long latency cortical potentials evoked by electrical stimulation of both the tooth pulp and sciatic nerve in gallamine immobilized rabbits was inhibited by intracerebroventricular calcitonin (17U/kg) but not the intravenous injection of 50U/kg. Pretreatment with naloxone showed no influence upon the inhibitory effect of calcitonin, though it completely antagonized the effect

of morphine. The results suggest the analgesic effect of intracerebroventricular porcine calcitonin can be attributed to blocking of pain pathways in the CNS in a manner distinct from the narcotic analgesic. 11 references. (Author abstract)

002937 Yohe, Herbert C.; Ueno, Kunihiro; Chang, Nan-Chen; Glaser, Gilbert H.; Yu, Robert K. Yu: Dept. of Neurology, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 **Incorporation of N-acetylmannosamine into rat brain subcellular gangliosides: effect of pentylenetetrazol-induced convulsions in brain gangliosides.** Journal of Neurochemistry. 34(3):560-568, 1980.

The radioactive labeling of total ganglioside fractions and of major individual gangliosides in 20-day-old male rat brain microsomes and synaptosomes was studied after intracerebral injection of the sialic acid precursor, N-acetylmannosamine. After this labeling pattern was established, the effect of pentylenetetrazol on brain gangliosides was examined in detail. Significant decreases in radioactive label were seen in the polysialogangliosides GT1b and GQ1b from the synaptosomal and microsomal fractions of the convulsed animals. The decreases may have been due to the activation of membrane bound neuraminidase present with gangliosides in neuronal tissue. 40 references. (Author abstract modified)

002938 Young, W. Scott, III; Kuhar, Michael J. Kuhar: Dept. of Psychiatry and the Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Neurotensin receptor localization by light microscopic autoradiography in rat brain.** Brain Research. 206(2):273-285, 1981.

Light microscopic localization of the neurotensin receptor in slide mounted tissue sections using autoradiographic localization of (3H)neurotensin binding sites is described. Large variations in receptor distribution were found, even in small areas. In many regions, the distribution of the receptor paralleled that of the immunoreactive neurotensin found in other studies. Results suggest sites of neurotensin's action in producing various physiological effects such as hypothermia and analgesia. 28 references. (Author abstract modified)

002939 Zaczek, R.; Nelson, M.; Coyle, J. T. Dept. of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Kainic acid neurotoxicity and seizures.** Neuropharmacology. 20(2):183-189, 1981.

The effects of pretreatment with anesthetics and anticonvulsants on the neurotoxic action of kainic acid injections in the male Sprague-Dawley rat hippocampus and striatum were examined. Brief anesthesia with ether did not block the seizures as severe degeneration of the hippocampal CA1-4 pyramids and granule cells induced by kainic acid. Prolonged anesthesia with chloral hydrate/pentobarbital or gamma-butyrolactone protected most hippocampal neurons and blocked seizures. Phenobarbital (100mg/kg) prevented cortical seizures but provided minimal protection against hippocampal neuronal degeneration. Prolonged anesthesia with chloral hydrate/pentobarbital also attenuated the neurotoxic effects of kainic acid in the striatum. It is concluded that the anesthetic properties of drugs, rather than their anticonvulsant action, protected against the neurotoxic effects of kainic acid at the site of the injection. 28 references. (Author abstract modified)

002940 Zakharov, N. D.; Kravtsov, A. N.; Orlov, I. V. Institut normal'noy fiziologii im. P. K. Anokhina AMN SSSR, Moskva, USSR **/Action of cyclic 3',5'-adenosine monophosphate on central neurons./** O deystvii tsiklicheskogo 3',5'-adenozinmonofosfata na tsentral'nyye neyrony. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(6):1279-1283, 1980.

Action of cyclic 3',5'-adenosine monophosphate (cAMPh) on central neurons was studied in nonanesthetized and nonimmobilized rabbits. Neocortical nerve elements were identified according to their responses to stimulation of the fibers of the pyramidal tract. Unit responses in the cortex and thalamus to the cAMPh were examined by means of microiontophoresis. The impulse activity of the neurons was recorded through the central channel of multichannel glass microelectrodes, filled with a solution of NaCl. Results show that cAMPh changes the pattern of background unit activity, increasing or decreasing the discharge frequency; cAMPh changes unit responses both to acetylcholine and noradrenaline, and participates both in adrenergic and acetylcholinergic mechanisms of excitation processing in brain neurons. 23 references. (Journal abstract modified)

002941 Zhadina, S. D.; Vinogradova, O. S.; Bragin, A. G. Instituta biologicheskoy fiziki Akademii nauk SSSR, Pushchino-na-Oke, USSR **/The effects of acetylcholine and glutamate on septal neurons in vitro./** Vliyaniye atsetilkholina i glyutamata na neyrony septum in vitro. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(2):392-397, 1980.

The effects of acetylcholine and glutamate on neurons of the medial septal nucleus were studied in slices of the guinea-pig brain in vitro. Glutamate produced a stereotypic initial activating effect, but in many units (12 out of 31) the activating phase was followed by a decrease of discharge frequency and an increase in spike amplitude. The effects of acetylcholine depended upon the type of spontaneous neuronal activity. In units with a regular pacemaker like activity, it produced an increase of discharge frequency with slow, gradual onset and offset of response. In neurons with an irregular burst activity, the application of acetylcholine evoked rhythmic bursts or increased their regularity with variable changes of the mean frequency in different units. Results show two functional types of units in the medial septum. 23 references. (Journal abstract modified)

04 MECHANISM OF ACTION: BEHAVIORAL

002942 Adams, P. M.; Beauchamp, R.; Alston, C. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, Galveston, TX 77550 **Potentiation of apomorphine and d-amphetamine effects by naloxone.** Life Sciences. 28(6):629-634, 1981.

The effects of naloxone, an opiate antagonist, on the stereotypic behavior and locomotor activity induced by apomorphine and d-amphetamine were studied. Groups of adult male Sprague-Dawley rats were first tested for stereotypy and locomotor activity after apomorphine or d-amphetamine. Groups were subsequently tested with saline or naloxone plus the previously used dosage of apomorphine or d-amphetamine. Naloxone alone did not produce stereotypy, but did significantly reduce locomotor activity. Naloxone potentiated apomorphine and d-amphetamine induced stereotypy. Apomorphine induced activity was increased by naloxone, but d-amphetamine induced activity at 2.5mg/kg was reduced. Results are compatible with the suggestion that naloxone may potentiate both apomorphine and d-amphetamine by inhibiting an opiate receptor mechanism which normally interacts with catecholamine neuronal action. 13 references. (Author abstract)

002943 Advokat, Claire. Dept. of Pharmacology, University of Illinois College of Medicine, P.O. Box 6998, Chicago, IL 60680 **Analgesic tolerance produced by morphine pellets is facilitated by analgesic testing.** Pharmacology Biochemistry and Behavior. 14(2):133-137, 1981.

Analgesic tolerance induced by morphine pellets was examined in rats using the nociceptive tail flick reflex. Analgesic re-

sponses of animals who received preliminary tail flick tests after morphine implantation were significantly lower than responses of naive, nontested animals. Previously tested animals were also significantly more tolerant to a morphine challenge than nontested animals. A dose response curve to morphine was not obtained, at the doses used here, from previously tested animals, whereas naive animals responded to morphine in a dose dependent manner. Environmental modulation of the tail flick reflex represents an elementary form of behavioral plasticity which may prove useful for neural analyses of simple reflex systems. 15 references. (Author abstract)

002944 Advokat, Claire. Dept. of Pharmacology, University of Illinois at the Medical Center, P.O. Box 6998, Chicago, IL 60680 **Environmental modulation of analgesic tolerance induced by morphine pellets.** Pharmacology Biochemistry and Behavior. 14(2):139-142, 1981.

The development of analgesic tolerance to the nociceptive tail flick test was examined in morphine implanted rats. Animals repeatedly exposed to a nonfunctional tail flick apparatus after implantation, were significantly more tolerant than nonexposed animals, on subsequent tests with the functional apparatus. In contrast, prior exposure to an alternate nociceptive, hotplate test, did not significantly modify tolerance on the tail flick. Facilitation of tolerance, produced by prior tail flick assessment, was maintained for at least 1 week following the last test, but only if the morphine pellet was not removed. If the pellet was removed, the influence of prior analgesic assessment was not retained. The substantial plasticity exhibited by the spinal tail flick reflex suggests the utility of this response for investigations of neural correlates of behavior. 9 references. (Author abstract)

002945 Albert, D. J. Psychology Dept., University of British Columbia, Vancouver, BC, Canada V6T 1W5 **Cholinergic, dopaminergic, noradrenergic, or glutaminergic stimulation ventral to the anterior septum does not specifically suppress defensive behavior.** Pharmacology Biochemistry and Behavior. 14(1):35-39, 1981.

Defensive behavior in male hooded rats was suppressed by intracranial infusion of carbachol or physostigmine, but not by a mixture of carbachol and atropine sulfate or by dopamine, norepineprhine, or glutamate. The cholinergic antagonists atropine methyl nitrate and atropine sulfate did not increase reactivity when infused ventral to the anterior septum, but the nonspecific blocking agent lidocaine was effective. Infusion of carbachol ventral to the anterior septum suppressed eating and general activity as well as defensiveness, suggesting the effect was nonspecific. It is concluded that the specific modulation of defensiveness by the neural system ventral to the anterior septum is not mediated by acetylcholine, dopamine, norepinephrine, or glutamate. 34 references. (Author abstract modified)

002946 Albertson, T. E.; Peterson, S. L.; Stark, L. G.; Baselt, R. C. Dept. of Internal Medicine, School of Medicine, University of California, Davis, CA 95616 **Valproic acid serum levels and protection against kindled amygdaloid seizures in the rat.** Neuropharmacology. 20(1):95-97, 1981.

The anticonvulsant effectiveness of valproic acid (VPA) against amygdaloid seizures was studied in a systematic, multiple dose evaluation in rats. VPA produced a significant decrease in afterdischarge length and seizure rank scores at 200mg/kg. No obvious neurological deficits were noted at this dose. At 30 min postinjection, the degree of seizure protection and increased serum levels of VPA were significantly correlated. Also at 30 min postinjection, the ED50 was found to be 200mg/kg and the ESL50 was estimated to be 500mg/L. 16 references. (Author abstract modified)

002947 Altshuler, Harold L.; Applebaum, Eve; Shippenberg, Toni S. Neuropsychopharmacology Research Section, Texas Research Institute of Mental Sciences, Houston, TX 77030 **The effects of opiate antagonists on the discriminative stimulus properties of ethanol.** Pharmacology Biochemistry and Behavior. 14(1):97-100, 1981.

Naloxone (1.0 and 10.0mg/kg) and naltrexone (1.0 and 10.0mg/kg) were injected intramuscularly in male Sprague-Dawley rats trained to discriminate ethanol from saline. Neither opiate antagonist significantly altered ethanol discrimination performance. Results indicate that the discriminative stimulus properties of ethanol are not dependent on intact opiate pathways. The discriminative stimulus property of ethanol is probably mediated by a different mechanism than its reinforcing effect, which appears to be mediated by endogenous opiate systems. 32 references. (Author abstract modified)

002948 Arnt, Jorn; Christensen, Anne Vibeke. Dept. of Pharmacology and Toxicology, H. Lundbeck and Co. A/S, Ottiliavej 7-9, UK-2500 Valby, Denmark **Differential reversal by scopolamine and THIP of the antistereotypic and cataleptic effects of neuroleptics.** European Journal of Pharmacology. 69(1):107-111, 1981.

Scopolamine reversed neuroleptic induced catalepsy and neuroleptic blockade of amphetamine induced stereotypies in male Wistar rats. Butyrophenones were sensitive to scopolamine reversal, but the thioxanthenes cis-Z-flupentixol and piflutixol were not. The GABA agonist 4,5,6,7-tetrahydroisoxazolo(5,4-C)pyridin-3-ol did not alter the effects of cis-Z-flupentixol, fluphenazine, or haloperidol. The relevance of these findings to the use of stereotypy and catalepsy tests to screen for antischizophrenic effects and extrapyramidal side-effects is discussed. 10 references. (Author abstract modified)

002949 Ashmarin, I. P.; Antonova, L. V.; Titov, S. A.; Maksimova, L. A.; Kamenskiy, A. A. Kafedra biokhimii MGU im. M. V. Lomonosova, Moskva, USSR /**Possible mechanisms of effect of ACTH4-10 and its analog, containing D-isomer of phenylalanine, on behavior.**/ Vozmozhnyye mekhanizmy raznonapravlennogo deystviya AKTG4-10 i yego analoga, soderzhashchego D-izomer fenilalanina, na povedeniye. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(6):1196-1203, 1980.

Possible mechanisms of effect of ACTG4-10 and its analog, containing D-isomer of phenylalanine, on behavior was studied in male white rats. The effect of these two oligopeptides, namely ACTG4-10 and hexopeptide met-glu-his-D-phen-lis-L-phen (Dphen-GP) on memorizing the situation and on the orienting and investigating reaction was examined using the method of elaboration of the food procuring habit in a T-maze and by the open-field method. Results show that these peptides in a dose of 15mcg/kg with certain periods of administration, have an opposite effect on maze learning but a similar effect on memory in the open field. ACTG4-10 slightly increased motor activity in the open field, whereas Dphen-GP decreased it considerably. These results suggest that ACTG4-10 improves the formation of trace processes independently of the sign of reinforcement, whereas Dphen-GP selectively enhances defensive reaction and memorization connected with negative reinforcement. 13 references. (Journal abstract modified)

002950 Astrachan, David I.; Davis, Michael. Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT 06510 **Spinal modulation of the acoustic startle response: the role of norepinephrine, serotonin and dopamine.** Brain Research. 206(1):223-228, 1981.

The roles of norepinephrine (NE), serotonin (5-HT), and dopamine (DA) in spinal modulation of the acoustic startle response were investigated in rats. The postdrug infusion startle responses for each rat were compared with their respective predrug baseline to determine change in startle amplitude following administration of 5-HT (with and without pargyline pretreatment), 5-methoxy-N,N-dimethyltryptamine (5-MeODMT), NE, phenylephrine, isoproterenol, DA, or apomorphine. In contrast to 5-HT and NE, neither DA nor the DA agonist apomorphine increased acoustic startle when given intrathecally. Results suggest the possibility that a variety of drug or environmental manipulations that increase startle (e.g., sensitization to background noise, potentiation due to prior condition) might be expressed by release of 5-HT and/or NE into the spinal cord. Results also demonstrate the importance of the spinal cord as a potential target mediating drug effects on behavior. 21 references.

002951 Atterwill, C. K. MRC Developmental Biology Unit, Institute of Neurology, 33 John's Mews, London WC1, England **Effect of acute and chronic tri-iodothyronine (T3) administration to rats on central 5-HT and dopamine-mediated behavioural responses and related brain biochemistry.** Neuropharmacology. 20(2):131-144, 1981.

Tri-iodothyronine (T3) produced complex changes in central dopamine (DA) and 5-hydroxytryptamine (5-HT) systems in male Sprague-Dawley rats. Acute or chronic T3 treatment enhanced the hyperactivity response to tranylcypromine (TCP) plus L-DOPA. Behavioral responses to apomorphine were attenuated and the cataleptic response to haloperidol was potentiated in rats treated chronically with T3, but not in acutely treated animals. Striatal 3H-spiroperidol binding was not altered in chronically treated animals. The hyperactivity response to quipazine, 5-methoxy-N,N-dimethyltryptamine, or TCP plus L-tryptophan (TP) was markedly enhanced by chronic or acute T3 treatment. The accumulation of 5-HT and TP after TP injection was not altered by chronic T3. 51 references. (Author abstract modified)

002952 Avery, D. D.; Hawkins, M. F.; Wunder, B. A. Dept. of Psychology, Colorado State University, Fort Collins, CO 80523 **The effects of injections of bombesin into the cerebral ventricles on behavioral thermoregulation.** Neuropharmacology. 20(1):23-27, 1981.

The effects of injections of bombesin into the cerebral ventricles on behavioral thermoregulation were investigated. Data are reported here which indicate that bombesin also alters thermoregulation at ambient temperatures at, or above, thermoneutrality. Bombesin was microinjected into the lateral ventricles of unrestrained rats trained to press a bar to escape radiant heat and receive a draft of 23 degrees C plus or minus 1 degree C room air. Control injections did not alter the bar-press response and rectal temperature rose an average of 2.4 degrees C during the 30 min testing session. Following bombesin injections, however, the number of bar presses increased and body temperature did not rise above euthermic values. Additionally, animals which received bobesin were monitored at room temperature when they were removed from the apparatus after behavioral testing. These animals became hypothermic. Results are discussed in relation to the setpoint of body temperature. 11 references. (Author abstract modified)

002953 Barrett, R. J.; Leith, Nancy J. V. A. Medical Center, Nashville, TN 37203 **Tolerance to the discriminative stimulus properties of d-amphetamine.** Neuropharmacology. 20(3):251-255, 1981.

Male F-344 rats responding for milk on a variable interval 20 sec schedule of reinforcement were trained to discriminate d-amphetamine (0.5, 1.0, or 1.3mg/kg) from saline. Two days after chronic amphetamine treatment (78mg/kg over 4 days), rats were tested for tolerance at a dose that normally produced about 80% drug lever responding. Rats in all three groups showed tolerance to the cue properties of amphetamine, and tolerance was complete in the two lower dose groups. 21 references. (Author abstract modified)

002954 Bedford, John A.; Nail, Greg L.; Borne, Ronald F.; Wilson, Marvin C. Research Institute of Pharmaceutical Sciences, University of Mississippi, University, MS 38677 **Discriminative stimulus properties of cocaine, norcocaine, and N-allylnorcocaine.** Pharmacology Biochemistry and Behavior. 14(1):81-83, 1981.

Wistar rats trained to discriminate 5.0mg/kg cocaine from saline in a two bar operant chamber on a fixed-ratio 30 schedule of food reinforcement generalized from 2.5, 7.5, and 10mg/kg cocaine to the pretreatment cocaine and from 1.0mg/kg cocaine to saline. High doses of norcocaine (5.0 and 7.5mg/kg) generalized to cocaine, but 1.0mg/kg generalized to saline. A 20mg/kg dose of N-allylnorcocaine generalized to cocaine, but lower doses produced intermediate responding or generalized to saline. The data demonstrate that norcocaine and N-allylnorcocaine share similar stimulus properties with cocaine. Potency differences for these drugs are quite apparent and possible explanations for these are different lipid solubilities, rates of metabolism, dissociation constants and volumes of distribution. 13 references. (Author abstract modified)

002955 Benedek, G.; Obal, F., Jr.; Rubicsek, G.; Obal, F. Dept. of Physiology, University Medical School, Szeged, Hungary **Sleep elicited by olfactory tubercle stimulation and the effect of atropine.** Behavioural Brain Research. 2(1):23-32, 1981.

The effects of high frequency olfactory tubercle (TbOf) stimulations were studied on the EEG and behavior of freely moving cats. Results include: 1) TbOf stimulation elicited sleep similar in every respect to physiological sleep; 2) statistical evaluation of the results showed that primarily the appearance and maintenance of slow-wave sleep was facilitated by the stimulations. Stimulations during paradoxical sleep had no effect, but they did promote the recurrence of slow-wave sleep after the paradoxical sleep. The effect of stimulations during wakefulness depended on the ongoing activity; 3) TbOf stimulation brought about synchronization, which was characterized by a similar arousal threshold as for physiological sleep; and 4) atropine treatment prevented the behavioral effects and did not influence the EEG effects of the stimulations. 26 references. (Author abstract)

002956 Beninger, Richard J.; Phillips, Anthony G. Dept. of Psychology, Queen's University, Kingston, Ontario, K7L 3N6, England **The effects of pimozide during pairing on the transfer of classical conditioning to an operant discrimination.** Pharmacology Biochemistry and Behavior. 14(1):101-105, 1981.

Acquisition of an operant discrimination was enhanced in male Wistar rats previously exposed to pairings of the discriminative stimulus with food, compared to control animals. Rats that received the classical conditioning while under the influence of pimozide (1.0mg/kg) also showed enhanced acquisition of the discrimination when tested in an undrugged state. The role of dopaminergic neurons in the mechanism by which classical conditioning transfers to operant learning is discussed. 33 references. (Author abstract modified)

002957 Beyer, C.; Canchola, E.; Larsson, K. Secc. de Neuroendocrinologia, Subjefatura de Investig. Cientifica, Inst. Mexicano del Seguro Social, Apartado Postal 73-032, Mexico 73, D.F. Fa-

cilitation of lordosis behavior in the ovariectomized estrogen primed rat by dibutyryl cAMP. Physiology & Behavior. 26(2):249-251, 1981.

The effect of subcutaneous injections of dibutyryl cyclic AMP (0.5, 1, 2, 8, and 16mg) on the sexual behavior of ovariectomized, estrogen primed Wistar rats was studied. All but the lowest dose elicited lordosis in at least 50% of the rats. However, the response to dibutyryl cyclic AMP varied greatly among subjects, and no dose/response relationship was apparent. Theophylline (10mg) increased and prolonged the action of dibutyryl cyclic AMP. Bilateral injection of 50mcg dibutyryl cyclic AMP into the medial preoptic area of estrogen primed rats elicited lordosis in four of eight rats. Dibutyryl cyclic AMP did not produce sequential inhibition, which suggests its effect was not mediated by the secretion of adrenal progesterone. 14 references. (Author abstract modified)

002958 Borbely, Alexander A.; Neuhaus, Hans Ulrich; Tobler, Irene. Institute of Pharmacology, University of Zurich, CH-8006 Zurich, Switzerland **Effect of p-chlorophenylalanine and tryptophan on sleep, EEG and motor activity in the rat.** Behavioural Brain Research. 2(1):1-22, 1981.

The effects of a single injection of parachlorophenylalanine (PCPA) on sleep, motor activity and consummatory behavior were investigated in unrestrained rats which were continuously recorded with telemetric techniques on 2 control days and 6 drug days. Slow-wave sleep (SWS) was defined as the nonREM sleep fraction with a low predominant EEG frequency. In the 24 hour following PCPA administration, motor activity, and food intake were reduced and sleep was increased. SWS was massively enhanced, while REM sleep was depressed. The initial phase of sedation was followed by a phase of partial insomnia lasting 1 to 2 days. SWS and REMS were particularly depressed. Results indicate that depression of SWS and REMS, and the hyperactivity 1 to 2 days after PCPA administration, are a consequence of the reduced serotonin level, whereas the involvement of serotonergic mechanisms in the initial sedative phase and in the recovery phase is less clear. The existence of the daily distribution of sleep and activity, and of the specific pattern of SWS and REMS, indicates that the circadian sleep organization is little affected by serotonin depletion. 38 references. (Author abstract modified)

002959 Bowyer, J. F.; Winters, W. D. Dept. of Pharmacology, School of Medicine, University of California, Davis, CA 95616 **The effects of various anesthetics on amygdaloid kindled seizures.** Neuropharmacology. 20(3):199-209, 1981.

The effects of the cataleptic anesthetics gamma-butyrolactone (GBL), phencyclidine (PCP), and ketamine (KET) and the depressant anesthetics pentobarbital (PB) and chloralhydrate (CH) on amygdaloid kindled seizures in male Sprague-Dawley rats were examined. Anesthetic doses of GBL and PCP had minimal effects on afterdischarge duration (AD) and behavioral ranking (BR) but were more inhibitory to the AD and BR than was pentylenetetrazol. PCP induced spontaneous seizure activity at anesthetic doses, and KET induced epileptoid activity at supranesthetic doses. KET, PB, and CH completely inhibited seizure activity at anesthetic doses. GBL did not block the kindling process. 24 references. (Author abstract modified)

002960 Bozarth, Michael A.; Wise, Roy A. Center for Research on Drug Dependence, Dept. of Psychology, Concordia University, Montreal, Quebec H3G 1M8, Canada **Intracranial self-administration of morphine into the ventral tegmental area in rats.** Life Sciences. 28(5):551-555, 1981.

The rewarding properties of morphine injected directly into the ventral tegmental area were investigated using a self-administration procedure. Experimentally naive rats demonstrated rapid acquisition of a lever-pressing response which produced a 100ng infusion of morphine sulfate solution. Response rates were relatively stable and markedly exceeded lever-press rates of rats passively receiving the same pattern of infusions (i.e. yoked control Ss). Intracranial self-administration was effectively blocked by naloxone, suggesting that this behavior is mediated through opiate receptors and is not the consequence of mechanical trauma, or changes in osmolarity or pH. 22 references. (Author abstract modified)

002961 Brady, Kathleen T.; Balster, Robert L. Balster: Pharmacology Dept., Medical College of Virginia, Virginia Commonwealth University, Box 613 MCV Station, Richmond, VA 23298 **Discriminative stimulus properties of phencyclidine and five analogues in the squirrel monkey.** Pharmacology Biochemistry and Behavior. 14(2):213-218, 1981.

The discriminative stimulus properties of phencyclidine (PCP) and five analogues were studied in the squirrel monkey. Ss were trained to discriminate PCP from saline in a two lever drug discrimination task on a fixed-ratio 32 schedule of food presentation. After reliable discriminative control of lever choice was established, dose response determinations for generalization to the training dose of PCP were made with several doses of PCP and its analogues. All drugs produced dose dependent PCP appropriate responding. In all cases, the dose necessary to suppress operant responding to 50% of vehicle rates was three to five times larger than the ED50 dose for drug lever appropriate responding. Results indicate marked similarities in the behavioral effects of these six arylcyclohexylamines. 29 references. (Author abstract modified)

002962 Brautigam, M.; Flosbach, C. W.; Herken, H. Herken: Pharmakologisches Institut der Freien Universitat Berlin, Thielallee 69/73, D-1000 Berlin 33, West Germany **Depression of reserpine-induced muscular rigidity in rats after administration of lisuride into the spinal subarachnoid space.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2);177-179, 1980.

Muscular rigidity induced by reserpine (10mg/kg i.p.) in male Wistar rats was reduced by injections of lisuride hydrogen maleate into the lumbar spinal subarachnoid space and by i.p. injections of lisuride. Chronic catheterization of the lumbar spinal subarachnoid space permitted intrathecal drug administration in intact rats without anesthesia. Tonic activity of the gastrocnemius muscle was recorded electromyographically. The results suggest that the spinal cord is an important site of action of lisuride. 7 references. (Author abstract modified)

002963 Brown, David R.; Holtzman, Stephen G. Holtzman: Dept. of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322 **Suppression of drinking by naloxone in the rat: a further characterization.** European Journal of Pharmacology. 69(3):331-340, 1981.

In male CFE rats deprived of water for 24 hours, naloxone (0.1 to 10mg/kg) produced a dose related suppression of drinking immediately after water presentation without altering latency to begin drinking. Naloxone also suppressed water consumption induced by isoproterenol and angiotensin-II. Naltrexone was more potent than naloxone in reducing isoproterenol induced water intake. Schedule induced polydipsia was not altered by naloxone or naltrexone. Results suggest that beta-endorphin is involved in the regulation of water intake and that narcotic antagonists attenuate regulatory but not adjunctive drinking. 30 references. (Author abstract modified)

002964 Buckett, W. Roger. Research Dept., Boots Co. Ltd., Nittingham NG2 3AA, England **Pharmacological studies on**

stimulation-produced analgesia in mice. European Journal of Pharmacology. 69(3):281-290, 1981.

Analgesia induced by peripheral caudal electrostimulation in CD1 female mice was not altered by drugs that affect catecholamine or GABA containing neurons. The stimulation induced analgesia was potentiated by serotonergic stimulation by 5-hydroxy-D,L-tryptophan and was reduced under some circumstances by serotonin depletion with p-chlorophenylalanine. The serotonin reuptake inhibitors fluoxetine and zimelidine had no effect. Stimulation induced analgesia was observed in mice tolerant to methadone and meperidine in adrenalectomized mice. 45 references. (Author abstract modified)

002965 Campbell, Byron A.; Raskin, Lisa A. Dept. of Psychology, Princeton University, Princeton, NJ 08544 **Canalization of arousal in the preweanling rat : effects of amphetamine on aggregation with surrogate stimuli.** Developmental Psychobiology. 14(2):127-137, 1981.

Preweanling rats, 15 days of age, were placed in an unfamiliar cage containing one of a variety of surrogate conspecific stimuli to study canalization of arousal and the effects of amphetamine on aggregation. Both furriness and temperature of the surrogate stimuli proved important determinants of conspecific aggregation (huddling). Preference for the soft, fluffy surrogate was not mediated by temperature conservation. Amphetamine restricted the range of surrogate stimuli that elicited huddling in the Ss. The findings that amphetamine produces a steeper generalization gradient of approach to surrogate stimuli further confirms a previous hypothesis that amphetamine canalizes arousal toward salient environmental stimuli. These findings have implicatons for the use of amphetamines to treat hyperkinetic children. 23 references. (Author abstract modified)

002966 Carter, C. J.; Pycock, C. J. Dept. of Neurology, Institute of Psychiatry, de Crespigny Park, Denmark Hill, London SE5, England **The role of 5-hydroxytryptamine in dopamine-dependent stereotyped behaviour.** Neuropharmacology. 20(3):261-265, 1981.

Large doses of 5-hydroxytryptamine (5-HT) receptor antagonists attenuated the stereotyped sniffing and biting induced by apomorphine in male Porton rats, but small doses of 5-HT antagonists converted sniffing to more intense biting. Small doses of 5-HT receptor stimulants converted sniffing to biting, but larger doses attenuated sniffing and biting. The complex role of 5-HT in the mediation of stereotyped behavior is discussed. It is suggested that the full spectrum of dopamine dependent stereotyped behavior in rats will not develop unless there is a concomitant increase in central 5-HT function. 31 references. (Author abstract modified)

002967 Chang, Yung-Feng; Hernandez, Manuel F.; Myslinski, Norbert R. Dept. of Biochemistry, University of Maryland Dental School, Baltimore, Md 21201 **Enhancement of hexobarbital-induced sleep by lysine and its metabolites.** Life Sciences. 28(4):407-413, 1981.

The enhancement of hexobarbital induced sleep by lysine and its metabolites was investigated. Lysine was shown to be metabolized in the rat brain to pipecolic acid, which is a precursor of piperidine. Lysine and its time for their effect on the sleeping time induced by hexobartial in the rat. Only L-lysine and D-lysine were found to prolong sleeping time significantly without toxic effect. A 3 day pretreatment with L-lysine produced an even more profound sleep prolongation. In most cases sleep enhancement was accompanied by a significant shortening of the time of sleep onset. Quantification of brain hexobarbital levels in the control and treated rats indicates that prolongation of sleeping time was not produced by inhibition of hexobarbital metabolism. The sleep prolonging effect of lysine, therefore, may be a direct action of lysine, or the metabolite(s) derived in vivo from lysine, on the CNS. 39 references. (Author abstract modified)

002968 Chiodo, Louis A.; Caggiula, Anthony R.; Saller, Charles F. Psychobiology Program, University of Pittsburgh, Pittsburgh, PA 15260 **Estrogen potentiates the stereotypy induced by dopamine agonists in the rat.** Life Sciences. 28(7):827-835, 1981.

Repeated weekly treatment with 100mcg/kg of estradiol benzoate (EB) to ovariectomized female rats was found to intensify the stereotypy induced by the dopamine agonists amphetamine and apomorphine. A similar effect on amphetamine stereotypy was produced 48 hours after a single injection of 10mcg/kg of EB. The fact that EB failed to increase blood or brain levels of either 3H-amphetamine or 3H-apomorphine suggests that these behavioral effects were not due to altered peripheral drug metabolism or uptake into the brain. The enhancement of stereotypy produced by EB is viewed as one manifestation of a more complex modulatory influence of estrogen on DA function. 26 references. (Author abstract)

002969 Colotla, Victor A.; Bautista, Samuel; Torres-Chazaro, Octavio. Universidad Nacional Autonoma de Mexico, Mexico 20, D.F., Mexico **/Brief communication: behavioral recovery after toluene exposure in rats./** Communicion breve: recuperacion conductual despues de exposicion al tolueno en ratas. Revista Mexicana de Analisis de la Conducta. 6(1):103-111, 1980.

Behavioral recovery after toluene exposure was measured in five albino rats. The results show that during the recovery sessions (after toluene dosage) the differential reinforcement of low rate performance decreased to baseline levels, but the fixed-ratio performance remained at low levels. During the time out periods, the increase in the number of responses which occurred during exposure to the solvent decreased to baseline in the postdose session. The response rate in the postdose session increased progressively. These results can be explained by the fact that the concentration of toluene in the blood grows progressively with time and is related to the deterioration of behavior. 10 references. (Journal abstract modified)

002970 Concannon, James T.; Schechter, Martin D. Dept. of Pharmacology, Northeastern Ohio Universities College of Medicine, Rootstown, OH 44272 **Hyperactivity in developing rats: sex differences in 6-hydroxydopamine and amphetamine effects.** Pharmacology Biochemistry and Behavior. 14(1):5-10, 1981.

Possible sex differences in activity and response to d-amphetamine were studied in Sprague-Dawley rats given intracisternal injections of 6-hydroxydopamine (6-OHDA) or its vehicle at 5 days of age. Males treated with 6-OHDA were hyperactive at 27 days of age, but treated females were hypoactive relative to the vehicle treated controls. The stimulant effect of d-amphetamine on activity was attenuated in 6-OHDA treated males and enhanced in treated females, compared to controls. No conclusive evidence was found for the ability of d-amphetamine to decrease 6-OHDA induced hyperactivity, however the results implicate the role of sex as subjects in modulating the effects of 6-OHDA and d-amphetamine on activity in developing rats. 24 references. (Author abstract modified)

002971 Cowen, P. J.; Green, A. R.; Nutt, D. J.; Martin, I. L. MRC Clinical Pharmacology Unit, Radcliffe Infirmary, Oxford OX2 6HE, England **Ethyl beta-carboline carboxylate lowers seizure threshold and antagonizes flurazepam-induced sedation in rats.** Nature. 290(5801):54-55, 1981.

The hypothesized anticonvulsant, hypnotic, and anxiolytic actions of ethyl beta-carboline-3-carboxylate (beta-CCE) were investigated in rats. In contrast to the benzodiazepines, beta-CCE lowered seizure threshold and reversed the sedative effect of flurazepam. It is suggested that if beta-CCE has a close structural relationship to the endogenous ligand, benzodiazepines may be antagonistic at the receptor site. It is concluded that beta-CCE has effects opposed to the benzodiazepines, but not that the reversal of the flurazepam induced sedation and the convulsant effects of beta-CCE are mediated through the same subpopulation of benzodiazepine receptors. 19 references. (Author abstract modified)

002972 Crawley, Jacqueline N.; Marangos, Paul J.; Paul, Steven M.; Skolnick, Phil; Goodwin, Frederick K. Clinical Psychology Branch, National Institute of Mental Health, Bethesda, MD 20205 **Interaction between purine and benzodiazepine: inosine reverses diazepam-induced stimulation of mouse exploratory behavior.** Science. 211(4483):725-727, 1981.

The behavioral effects of benzodiazepines in mice were investigated. Inosine, 2-deoxyinosine, and 2-deoxyguanosine completely reversed the increase in exploratory activity elicited in mice by diazepam. The inhibition of exploratory behavior by purines occurred at doses that when given alone have no effect on exploratory behavior. 7-Methylinosine, which does not bind to the brain benzodiazepine binding site in vitro, had no effect on the diazepam induced increase in exploratory behavior. Behavioral effects produced by various combinations of inosine and diazepam indicate that the interaction between purine and benzodiazepine is antagonistic and support the hypothesis that the naturally occurring purines function in anxiety related behaviors that respond to benzodiazepine treatment. 21 references. (Author abstract)

002973 Cuomo, V.; Cortese, I.; Racagni, G. Institute of Pharmacology, University of Bari, Bari, Italy **Effects of morphine and chlordiazepoxide on avoidance behaviour in two inbred strains of mice.** Neuropharmacology. 20(3):301-304, 1981.

The effects of morphine and chlordiazepoxide on shuttlebox avoidance behavior in male DBA/2J (DBA) and C57BL/6J (C57) mice were studied. The DBA mice reached higher avoidance levels than did the C57 mice after saline administration. Morphine facilitated avoidance responding in C57 mice but not in DBA mice. Improved avoidance behavior was seen in both strains after chlordiazepoxide administration. A subthreshold dose of chlordiazepoxide enhanced the effect of morphine on avoidance behavior in DBA mice, but no interaction between the two drugs was seen in C57 mice. 10 references. (Author abstract modified)

002974 Davis, Stephen F.; Whiteside, David A.; Dickson, Virginia A. Thomas, Roger L.; Heck, Douglas G. Emporia State University, Emporia, KS 66801 **Conditioning and retention of defensive burying as a function of Elavil and Thorazine injection.** Bulletin of the Psychonomic Society. 17(2):107-110, 1981.

The effects of amitriptyline (Elavil) and chlorpromaxine (Thorazine) on conditioning and retention of defensive burying were investigated. Three groups of rats received i.p. injections of Thorazine, Elavil, and isotonic saline, respectively, prior to defensive burying testing. During the initial testing session, Thorazine injected Ss spent significantly less time engaged in defensive burying and accumulated significantly less bedding material than did the saline injected Ss. On other hand, Elavil injected Ss spent significantly more time burying and accumulated significantly more bedding material than did the saline injected Ss. No significant differences, either in terms of time spent in burying or height of accumulated bedding material, were observed during retention testing. 10 references. (Author abstract modified)

002975 de Catanzaro, Denys; Gray, D. Shaun; Gorzalka, Boris B. Gorzalka: Dept. of Psychology, University of British Columbia, 2075 Westbrook Mall, Vancouver, BC, V6T 1W5, Canada **Effects of acute central and peripheral ACTH1-24 administration on lordosis behavior.** Physiology & Behavior. 26(2):207-213, 1981.

The role of adrenocorticotropic hormone (ACTH) in the control of the lordosis reflex was studied in female Sprague-Dawley rats. Intraventricular infusion of ACTH1-24 lowered the performance of ovariectomized (ovx) and of adrenalectomized/ovariectomized (adx-ovx) estrogen primed rats. In contrast, subcutaneous injection of ACTH1-24 elevated the performance of ovx, but not of adx-ovx estrogen primed females. Spontaneous stretching, yawning, and grooming were observed after the intraventricular injection of ACTH1-24, but not after peripheral administration. Results suggest that the central effect of acute ACTH elevation differs from the peripheral effect and that the peripheral effect is mediated by the adrenals. 34 references. (Author abstract modified)

002976 Deakin, J. F. W.; Dashwood, M. R. Div. of Neurophysiology and Neuropharmacology, National Institute for Medical Research, The Ridgeway, Mill Hill, London NW7 1AA, England **The differential neurochemical bases of the behaviours elicited by serotonergic agents and by the combination of a monoamine oxidase inhibitor and L-DOPA.** Neuropharmacology. 20(2):123-130, 1981.

The role of serotonergic and dopaminergic mechanisms in the behaviors induced in rats by p-chloroamphetamine, 5-methoxy-N,N-dimethyltryptamine, and L-DOPA combined with a monoamine oxidase inhibitor was studied. Results suggest that forepaw treading, head weaving, and hind limb abduction are mediated by serotonin with no catecholamine link. Hyperreactivity and hyperactivity appear to be mediated by catecholamines. 27 references. (Author abstract modified)

002977 Deutsch, J. A. Dept. of Psychology, University of California at San Diego, La Jolla, CA 92093 **Calcitonin: aversive effects in rats?** Science. 211(4483):733-734, 1981.

The procedures used by W. Freed et al. in a study of the aversive effects of calcitonin in rats are questioned. Their study concludes that on the basis of a conditioned aversive test the reduced food intake after injections of calcitonin appears not to be the result of illness or aversive effects. A different procedure is described which utilizes a two bottle test with two novel flavors. The results of this test brings into question the results of Freed et al. 7 references.

002978 Diakow, Carol; Nemiroff, Audrey. Biology Dept., Adelphi University, Garden City, NY 11530 **Vasotocin, prostaglandin, and female reproductive behavior in the frog, Rana pipiens.** Hormones and Behavior. 15(1):86-93, 1981.

The effects of vasotocin and prostaglandin on female reproductive behavior in the frog, Rana pipiens, were studied. Receptive behavior as indicated by inhibition of the release call, was potentiated by administration of 5mcg/gbw (ip) prostaglandin E2. Arginine-8 vasotocin (1mcg/g body wt) also inhibited the release call, but its effect was delayed by a single injection of 10mcg/g body wt of the prostaglandin synthetase inhibitor, indomethacin. These results suggest that both vasotocin and prostaglandin may be involved in the manifestation of female mating behavior in R. pipiens, and that vasotocin may act, at least in

part, through a mechanism that involves prostaglandin synthesis. (Author abstract modified)

002979 Dickinson, William Arthur. Southern Illinois University at Carbondale **Dose-response study of the precipitated abstinence syndrome for morphine: systemic vs periaqueductal gray naloxone. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3226-B, 1981. Ann Arbor, Univ. Microfilms No. 8102363, 122p., 1980.

The effects of systemic and periaqueductal midbrain gray (PAG) injections of naloxone on the behavior of morphine dependent rats was investigated. Eighty rats received systemic doses of 0.0, 0.05, 0.5, 5.0, or 50.0mg/kg naloxone; central PAG doses, administered to 80 rats, were 0.0, 0.1, 1.0, 10.0, and 100.0mcg/microliter isotonic saline. Postinjection testings included flinch jump and behavioral observation of withdrawal signs. A significant degree of variability in the changes on flinch jump measures was found, and although the trend was towards hyperalgesia during withdrawal this did not reach significance. Some of the behavioral components of naloxone precipitated withdrawal were more frequent and more severe following systemic naloxone while others were more severe following PAG naloxone. Still others appeared not to differ in severity and similar dose/response curves were exhibited. Results indicate that the phenomena of morphine withdrawal is most likely a reflection of both centrally (PAG) and peripherally mediated behavior changes. (Journal abstract modified)

002980 Dobry, Peggy J. K.; Piercey, M. F.; Schroeder, L. A. Upjohn Company, Central Nervous System Research, Kalamazoo, MI 49001 **Pharmacological characterization of scratching behaviour induced by intracranial injection of substance P and somatostatin.** Neuropharmacology. 20(3):267-272, 1981.

Intracranial injections of substance-P (SP) induced a reciprocal hindlimb scratching syndrome in male CF-1 mice. Scratching was also induced by the C-terminal SP hexapeptide, SP-6-11, but not by the pentapeptide, SP-7-11. Intracranial injections of biogenic amines and peptides failed to mimic the effects of SP precisely, but kainic acid and somatostatin produced weaker scratching syndromes. The effect of SP was nonspecifically antagonized by a variety of pharmacological agents. SP did not elicit scratching when given i.p. or i.v., but i.v. somatostatin did elicit scratching (with a potency similar to that of intracranial somatostatin) . Results include: 1) antagonism of reciprocal hindlimb scratching is not specific for opiates, and 2) the effect of morphine on scratching is not specifically directed against SP. 37 references. (Author abstract modified)

002981 Dourish, C. T.; Cooper, S. J. Cooper: Dept. of Psychology, University of Birmingham, Birmingham B15 2TT, England **Single or repeated administration of small doses of apomorphine on water intake and activity in water-deprived rats.** Neuropharmacology. 20(3):257-260, 1981.

Chronic treatment with small doses of apomorphine HC1 (15, 60, or 125mcg/kg/day for 10 days) stimulated water consumption in thirsty male Sprague-Dawley rats. Acute administration of apomorphine at the same dose levels did not affect drinking. Locomotor activity was stimulated by both acute and chronic apomorphine treatment. 28 references. (Author abstract modified)

002982 Dourish, Colin T.; Cooper, Steven J. Cooper: Dept. of Psychology, University of Birmingham, P.O. Box 363, Birmingham B1S 2TT, England **Effects of acute or chronic administration of low doses of a dopamine agonist on drinking and locomotor activity in the rat.** Psychopharmacology. 72(2):197-202, 1981.

The effects of acute or chronic administration of low doses of a dopamine agonist (piribedil) on drinking and locomotor activity were investigated in rats. Low doses of piribedil (0.25mg/kg to 5.0mg/kg) administered acutely produced reliable decrements in locomotor activity in thirsty and nonthirsty animals; the greatest effect occurred at the highest dose. A sequence of 10 daily injections of piribedil produced indications of the development of tolerance at the two highest doses in thirsty animals. The smallest doses used, given either acutely or chronically, produced a weak enhancement of drinking behavior within the first 15 minutes of a drinking test, as shown by a reduction in latency to drink and an increase in the amount of water consumption. Tolerance did develop with respect to drinking behavior; animals treated chronically with piribedil displayed higher levels of drinking at several dose levels when compared with acutely treated Ss. The tolerance displayed at the two highest doses could have a close affinity with that shown with regard to locomotor activity. 23 references. (Author abstract modified)

002983 Drew, William G.; DeRossett, Sarah E.; Gotsick, James E. University of Kentucky College of Medicine, Lexington, KY 40536 **An improved model of intraspecific aggression: dose-response analysis of apomorphine-induced fighting and stereotypy in the rat.** Bulletin of the Psychonomic Society. 17(1):53-56, 1981.

A paradigm more sensitive and specific than the original apomorphine model proposed by Senault was employed to measure intraspecific aggression in the rat. Several behavioral measures provided detailed descriptions of aggressive and nonaggressive behaviors. Several new aggressive responses not previously attributed to apomorphine are noted. Graded doses of apomorphine were administered to determine the qualitative and quantitative dose response relationships produced by apomorphine on both aggressive and nonaggressive behaviors. It is reported that maximum fighting times were obtained at apomorphine doses of 2.5 and 5.0mg/kg. 11 references. (Author abstract)

002984 Driscoll, Peter; Baettig, Karl. Institut fuer Verhaltenswissenschaft, ETHZ, CH-8092 Zurich, Switzerland **Selective inhibition by nicotine of shock-induced fighting in the rat.** Pharmacology Biochemistry and Behavior. 14(2):175-179, 1981.

The frequency of shock induced fighting, posturing, and no reaction (running/jumping or freezing) after acute SC injections of 0, 0.1, 0.2, and 0.4mg/kg nicotine, was measured in 38 pairs of male and 12 pairs of female rats. Sensitivity to footshock was also measured, at the same nicotine doses, in males. Nicotine inhibited shock induced fighting in 32 pairs of high frequency fighting males in a dose dependent fashion, with fighting being gradually replaced by posturing at the 0.1 and 0.2mg/kg doses. There was a significant increase in the no reaction category only at 0.4mg/kg, indicating that reduced activity may have been partly responsible for the reduction in fighting seen at that dose. None of the doses had a significant effect on sensitivity to footshock. Nicotine had no effect on shock induced fighting in the six low frequency fighting male pairs, and affected the female pairs only at the 0.4mg/kg level, where fighting was also decreased due to an increase in the no reaction category. It is concluded that small doses of nicotine, under favorable conditions, are capable of inhibiting shock induced fighting in rats without altering shock sensitivity or depressing activity. 46 references. (Author abstract)

002985 Dunn, Adrian J.; Childers, Steven R.; Kramarcy, Neal R.; Villiger, John W. Dept. of Neuroscience, University of Florida College of Medicine, Gainesville, FL 32610 **ACTH-induced grooming involves high-affinity opiate receptors.** Behavioral and Neural Biology. 31(1):105-109, 1981.

Naloxazone, an irreversible inhibitor of high affinity opiate receptors was used to test whether excessive grooming in mice following intracerebroventricular ACTH involves interaction with high affinity of opiate receptors. ACTH induced grooming was blocked 16 hours following naloxazone but not naloxone. At this time morphine induced antinociception measured in the tail immersion test was present in naloxone but not naloxazone treated mice. The deficit caused by naloxazone was not permanent and 4 days later, ACTH again elicited excessive grooming. These results together with other published data suggest that ACTH induces excessive grooming by interaction with high affinity cerebral opiate receptors. 10 references. (Author abstract)

002986 Dunstan, Robin; Broekkamp, Chris L.; Lloyd, Kenneth G. Lloyd: Synthelabo-L.E.R.S., Dept. of Neuropharmacology, 31, Avenue Paul Vaillant Couturier, F-92220 Bagneux, France **Involvement of caudate nucleus, amygdala or reticular formation in neuroleptic and narcotic catalepsy.** Pharmacology Biochemistry and Behavior. 14(2):169-174, 1981.

The involvement of caudate nucleus, amygdala, or reticular formation in neuroleptic and narcotic catalepsy was studied. Local injection of haloperidol into the caudate nucleus produced catalepsy in contrast to the weak effects of morphine injected at the same site. Injection of either haloperidol or morphine into the amygdala did not have any cataleptogenic effect. Both haloperidol and morphine produced catalepsy when injected into the reticular formation. Naloxone injected into the reticular formation completely reversed the catalepsy following intraperitoneal morphine but not haloperidol. Pretreatment with alpha-methyl-p-tyrosine potentiated the effect of haloperidol injected into either the reticular formation or caudate nucleus. Phentolamine, but not lignocaine or metergoline, injected into the reticular formation also caused a cataleptic response. The results confirm the caudate nucleus as a site for haloperidol catalepsy and in addition, suggest the reticular formation as a primary site for morphine catalepsy and a secondary site for haloperidol catalepsy; additionally, a noradrenergic modulation of catalepsy may occur within this brainstem region. 30 references. (Author abstract modified)

002987 Eichelman, Burr S., Jr. Dept. of Psychiatry, University of Wisconsin, Madison, WI 53706 **Drug regimens facilitating aggression: behavior, amine, and receptor alterations.** Psychopharmacology Bulletin. 17(1):58-60, 1981.

Studies of drug regimens which facilitate aggression are described, and the behavioral, amine, and receptor alterations caused by these drugs are discussed. Studies confirm previous findings that catecholamines play a facilitatory role in the modification of aggressive behavior and serotonin systems play an inhibitory role; however, substantial differences among animal models and between the effects of acute and chronic drug regimens are demonstrated. It is cautioned that the role of serotonin in predatory aggression must be carefully dissected from caloric or protein deficiencies which also alter predatory aggression in both the rat and mouse. 11 references. (Author abstract modified)

002988 Ellison, Gaylord; Nielsen, Erik B.; Lyon, Melvin. Dept. of Psychology, University of California, 405 Hilgard Ave., Los Angeles, CA 90024 **Animal model of psychosis: hallucinatory behaviors in monkeys during the late stage of continuous amphetamine intoxication.** Journal of Psychiatric Research. 16(1):13-22, 1981.

Hallucinatory behaviors in monkeys were examined after silicone capsules containing d-amphetamine base were implanted subcutaneously in seven monkeys. All monkeys were sleepless for a number of days, initially engaging in highly idiosyncratic episodes of motor stereotypies or prolonged bouts of staring. This was followed by a period of less focused activity where fragments of the initial stereotypies appeared. On the fourth to sixth day after capsule implanation several new behaviors developed. There were increases in sudden orienting responses and motor dyskinesias such as limb tremors and oral protrusions. At about the same time discrete episodes of hallucinatory behaviors appeared, including at different times attacks, sudden fleeing responses, capturing movements by the hands in midair, and excited grooming episodes of parasitosis. This late stage of continuous amphetamine administration in monkeys is similar to the final stages of amphetamine psychosis, which in humans is a close drug model of paranoid schizophrenia. 21 references. (Author abstract modified)

002989 Faustman, William; Fowler, Stephen; Walker, Cynthia. Fowler: Dept. of Psychology, University of Mississippi, University, MS 38677 **Time course of chronic haloperidol and clozapine upon operant rate and duration.** European Journal of Pharmacology. 70(1):65-70, 1981.

The effects of haloperidol and clozapine on operant response rate and average response duration were determined in male Sprague-Dawley rats responding under a fixed-ratio 10 schedule of food reinforcement. Haloperidol (0.5mg/kg i.p.) was given 2.5, 5.0, 7.5, and 10 hours prior to testing, and clozapine (5.9mg/kg i.p.) was given 1.0, 2.0, 3.0, and 4.0 hours before testing. For both drugs, the time since injection produced significant effects on rate and duration: rate increased and duration decreased as a function of time after injection. Haloperidol tended to have a greater effect than clozapine on response duration. 13 references. (Author abstract modified)

002990 Fernando, J. C. R.; Curzon, G. Dept. of Neurochemistry, Institute of Neurology, 33, John's Mews, London WC1N 2NS, England **Behavioural responses to drugs releasing 5-hydroxytryptamine and catecholamines: effects of treatments altering precursor concentrations in brain.** Neuropharmacology. 20(2):115-122, 1981.

The effects of amino acids that alter brain tryptophan or tyrosine concentrations on behavioral responses to p-chloroamphetamine, fenfluramine, and d-amphetamine were studied in male Sprague-Dawley rats. Tryptophan increased the tremor induced by p-chloroamphetamine and the backward walking induced by fenfluramine, but did not alter the drugs' other behavioral effects. Tryptophan altered some but not all of the behaviors evoked by d-amphetamine. Behavioral responses dependent on serotonin or catechloamine release were not altered by tyrosine or valine. Results are discussed in relation to the regulation of serotonin and dopamine synthesis and the behavioral interactions of these transmitters. 29 references. (Author abstract modified)

002991 File, Sandra E.; Clarke, Anthony. Dept. of Pharmacology, School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, England **Exploration and motor activity after intraventricular ACTH, morphine and naloxone.** Behavioural Brain Research. 2(2):223-227, 1981.

The effects of intraventricular adrenocorticotrophin (ACTH), morphine, and naloxone on exploration and motor activity were investigated. Intraventricular injection of morphine (5mcg) and ACTH (2.5mcg) reduced the time spent head dipping and the number of head dips made by rats during a 10 minute trial in a holeboard. These effects were reversed by naloxone (2.0mg/kg), in spite of the fact that naloxone alone also reduces these measures of exploration. None of the drugs or drug combinations tested significantly reduced locomotor activity. Results are dis-

cussed in relation to the action of ACTH on opiate receptors. 20 references. (Author abstract modified)

002992 Freed, William J.; Bing, Lloyd A.; Wyatt, Richard Jed. Adult Psychiatry Branch, National Institute of Mental Health, Saint Elizabeths Hospital, Washington, DC 20032 **Calcitonin: aversive effects in rats?** Science. 211(4483):734, 1981.

A response is offered to the criticisms of J. A. Deutsch concerning the ability of calcitonin to produce conditioned taste aversion in rats. It is reported that several studies were performed using those procedures suggested by Deutsch. However, these experiments still failed to produce a statistically significant conditioned taste aversion with calcitonin. It is still maintained that any sickness produced by calcitonin is insufficient to account for the inhibition of feeding. 5 references.

002993 Freed, William J.; Wyatt, Richard Jed. Adult Psychiatry Branch, Division of Special Mental Health Research, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Impairment of instrumental learning in rats by glutamic acid diethyl ester.** Pharmacology Biochemistry and Behavior. 14(2):223-226, 1981.

The effects of glutamic acid diethyl ester (GDEE), a partially effective antagonist of glutamate induced neuronal excitations, on instrumental learning in rats were investigated. GDEE was administered prior to an instrumental conditioning task involving food reinforcement. A profound impairment of learning was produced in animals receiving 240 or 480mg/kg of GDEE. Performance was not impaired by GDEE in rats that had previously learned the task. These findings support suggestions that central excitatory processes play an important role in learning phenomena, in particular when these learning phenomena involve acquisition of new behavioral patterns. 40 references. (Author abstract modified)

002994 Friedman, Howard J.; Jen, Ming-Feng; Kang, Jaw Chang; Lee, Nancy M.; Loh, Horace H. Lee: Langley Porter Psychiatric Institute, University of California, San Francisco, CA 94143 **Dynorphin: a possible modulatory peptide on morphine or beta-endorphin analgesia in mouse.** European Journal of Pharmacology. 69(3):357-360, 1981.

The interaction of dynorphin-(1-13) with analgesic opioids was demonstrated in male ICR mice in the tail flick test. Intracerebroventricular (i.c.v.) injection of 20 or 40mcg dynorphin-(1-13) had no analgesic effect itself, but attenuated the analgesia produced by morphine (2.0, 8.0, or 12.0mcg i.c.v.). Dynorphin-(1-13) potentiated analgesia induced by a 1.0mcg i.c.v. dose of beta-endorphin, but attenuated the analgesic effect of 4.0 or 6.0 i.c.v. beta-endorphin. A shorter portion of the dynorphin peptide, dynorphin-(1-9), had no analgesic effect itself and did not alter analgesia induced by beta-endorphin. Dynorphin-(1-13) had no effect on analgesia induced by the Sandoz compound FK33824, a met-enkephalin analogue. 6 references. (Author abstract modified)

002995 Fuller, R. W.; Snoddy, H. D.; Mason, N. R.; Owen, J. E. Lilly Research Laboratories, Eli Lilly & Co., Indianapolis, IN 46285 **Disposition and pharmacological effects of m-chlorophenylpiperazine in rats.** Neuropharmacology. 20(2):155-162, 1981.

The effects of 1-(m-chlorophenyl)piperazine (CPP), a metabolite of the antidepressant trazodone, on central serotonergic systems in male Wistar rats were determined. Results suggested that CPP acts as a direct serotonin agonist. It is suggested that the serotonin receptor agonist activity of CPP may account for the clinical antidepressant effects of trazodone. 34 references. (Author abstract modified)

002996 Fung, Yiu Kai. Ohio State University **The role of calcium and dopamine membrane carrier in mediating the behavioral and biochemical effects of amphetamine. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2575-B, 1981. Ann Arbor, Univ. Microfilms No. 8100153, 121p., 1980.

The role of calcium in mediating the behavioral effects of amphetamine was evaluated by the removal of calcium from extracellular space and possibly the tissue of mice striatum using ethylene glycol-bis-beta-aminoethylether,N-N'-tetraacetic acid (EGTA). The intrastriatal administration of EGTA or any other agents used did not by itself elicit circling behavior in mice lesioned with 6-hydroxydopamine in the right striatum. The effect of a variety of compounds on the circling behavior induced by the subsequent systemic injection of amphetamine was examined. EGTA inhibited the amphetamine induced circling. This effect of EGTA could be prevented by adding calcium to the EGTA solution, confirming that the effect of EGTA is due to the removal of calcium. While dopamine (DA) uptake blocking agents inhibit all the biochemical effects of amphetamine, EGTA only inhibits the stimulation of DA synthesis. Thus, EGTA may inhibit the behavioral effect of amphetamine by a different mechanism than the DA uptake inhibitors. Findings confirm the importance of calcium and the dopamine membrane carrier in mediating the behavioral and biochemical effects of amphetamine and that the mechanism of action of amphetamine is dependent on the release of a pool of DA that is supplied by new synthesis. This process of DA synthesis is dependent on extracellular calcium. (Journal abstract modified)

002997 Furman, J. M.; O'Leary, D. P.; Wolfe, J. W. O'Leary: Eye and Ear Hospital, 230 Lothrop St., Room 925, Pittsburgh, PA 15213 **Changes in the horizontal vestibulo-ocular reflex of the rhesus monkey with behavioral and pharmacological alerting.** Brain Research. 206(2):490-494, 1981.

Alterations in the dynamic characteristics of the horizontal vestibulo/ocular reflex of adolescent rhesus monkeys by changes in the animals' states of arousal were studied using linear system analysis employing both single frequency sinusoidal and white noise rotational stimulations. Arousal changes were induced by a behavioral task and/or the administration of amphetamines. Results indicate that highly alert animals display vestibulo/ocular reflex gains significantly different from less alert animals. Specifically, the gain of the vestibulo/ocular reflex is closer to unity over a wider range of frequencies in more alert animals. These changes were independent of the method used to maintain a high level of arousal. 10 references. (Author abstract modified)

002998 Gallagher, Michela; Kapp, Bruce S. Dept. of Psychology, Davie Hall 013A, University of North Carolina, Chapel Hill, NC 27514 **Effect of phentolamine administration into the amygdala complex of rats on time-dependent memory processes.** Behavioral and Neural Biology. 31(1):90-95, 1981.

The effects of alpha-adrenergic antagonist phentolamine on memory processes following intracranial administration into the amygdala complex were examined in Sprague-Dawley rats. The administration of phentolamine was observed to alter memory processes in a time dependent manner. Bilateral administration of phentolamine (8.5nmole) into the amygdala immediately after training significantly increased retention of passive avoidance conditioning. Delayed administration of the same dose 6 hours after training did not significantly alter retention. In addition, whereas posttraining administration of the beta-adrenergic antagonist propranolol (34.Onmole) into the amygdala significantly decreased retention, concurrent administration of phentolamine (8.5nmole) and propranolol (34.Onmole) resulted in normal retention. The effects of alpha-adrenergic and beta-adrenergic an-

tagonist administration on memory processes are discussed in terms of a possible opposing effect of these agents on norepinephrine function within the amygdala complex. 10 references. (Author abstract)

002999 Gerber, Gary J.; Bozarth, Michael A.; Wise, Roy A. Center for Research on Drug Dependence, Dept. of Psychology, Concordia University, Montreal, Quebec, Canada H3G 1M8 **Small-dose intravenous heroin facilitates hypothalamic self-stimulation without response suppression in rats.** Life Sciences. 28(5):557-562, 1981.

Intravenous heroin at 10mcg/kg and 30mcg/kg produced an immediate increase in rates of lever-pressing for electrical stimulation of the lateral hypothalamus, while 100mcg/kg produced brief suppression in some rats followed by reliable response rate increases in all rats. The duration of response facilitation increased with dose and corresponded to the duration of the interinfusion interval found in self-administration experiments. These data indicate correspondence between the reinforcing and the self-stimulation facilitation effects of heroin in relation to dose and time course parameters, and fit with the view that narcotic facilitation of self-stimulation reflects the reinforcing value of the drugs. 10 references. (Author abstract)

003000 Gerber, Gary J.; Sing, John; Wise, Roy A. Wise: Center for Research on Drug Dependence, Dept. of Psychology, Concordia University, Montreal, Quebec, Canada H3G 1M8 **Pimozide attenuates lever pressing for water reinforcement in rats.** Pharmacology Biochemistry and Behavior. 14(2):201-205, 1981.

The effects of pimozide on water reinforced lever-pressing by thirsty rats were examined to test the generality of neuroleptic effects on consumatory behavior. A low dose of pimozide (0.5mg/kg) did not significantly attenuate responding until the fifth session. A higher dose (1.0mg/kg) attenuated responding on all test occasions, with residual responding decreasing progressively across repeated drug sessions. Responding in the pimozide conditions was never less than that of the nonreinforced control group. Responding in each condition was strongest in the early minutes of a session. After five sessions, rats were switched from the pimozide condition to the nonreinforced condition (or vice versa) for one additional test day. Decreased responding continued for rats transferred from nonreinforcement to pimozide though not for rats transferred from pimozide to nonreinforcement. These data suggest a general role for brain dopamine in behavior; they reflect the same patterns as have been seen with food reinforcement and with several centrally acting reinforcers. 18 references. (Author abstract modified)

003001 Gisquet-Verrier, Pascale. Centre National de la Recherche Scientifique, Lab. de Physiologie Nerveuse, Dept. de Psychophysiologie, F-91190 Gif-sur-Yvette, France **Accelerated extinction after post-trial halothane anaesthesia in rats: an aversive effect.** Physiology & Behavior. 26(2):223-231, 1981.

In male Sprague-Dawley rats trained in straight alley, modified K-maze, and barpress learning tasks, extinction was accelerated by immediate posttrial treatment with halothane. This effect was not due to motor impairment and was not observed when halothane was given 2 hours after the trial. No amnesic component was associated with a single halothane treatment, but aversive effects were observed after repeated halothane administration. Results suggest that the effects of halothane on retention may be due to aversive rather than amnesic properties. 34 references. (Author abstract modified)

003002 Glick, Stanley D.; Weaver, Linda M.; Meibach, Richard C. Dept. of Pharmacology, Mount Sinai School of Medicine, City University of New York, One Gustave L. Levy Place, New York, NY 10029 **Amphetamine-induced rotation in normal cats.** Brain Research. 208(1):227-229, 1981.

Amphetamine elicited dose related rotation (circling behavior) in nine naive cats is reported. All cats also rotated, at lower rates, during nondrug sessions. The direction of rotation was consistent for each cat, with six cats rotating to the right and three to the left. Results extend the generality of previous findings involving rodents and suggest that an endogenous asymmetry in striatal dopamine activity may be a common characteristic of many animal species. An asymmetry in striatal dopaminergic function has not yet been directly demonstrated in man; however, a recent report of lateralized neuroleptic induced dyskinesias suggests that such an asymmetry will soon be found. 16 references. (Author abstract modified)

003003 Goett, James Michael; Kay, Edwin J. Kay: Dept. of Psychology, Lehigh University Chandler-Ullmann No. 17, Bethlehem, PA 18015 **Lithium chloride and delta-9-THC lead to conditioned aversions in the pigeon.** Psychopharmacology. 72(2):215-216, 1981.

Conditioned aversive effects of delta9-tetrahydrocannabinol (THC) and lithium chloride (LiCl) were demonstrated in pigeons. Pigeons injected with 0.15M LiCl showed a reduction in preference for red water compared to pigeons injected with NaCl. Pigeons injected with 2.0mg/kg of THC showed a decreased preference for red water. It was necessary to habituate the pigeons to the novel color of the water, which is in contrast to the usual report that a novel stimulus is more effective in the aversive conditioning literature. 6 references. (Author abstract modified)

003004 Gomita, Yutaka; Ueki, Showa. Dept. of Pharmacology, Daiichi College of Pharmaceutical Sciences, Fukuoka 815, Japan **behavior and the effect of benzodiazepines.** Pharmacology Biochemistry and Behavior. 14(2):219-222, 1981.

The effects of benzodiazepines on behavior of rats in a conflict situation established by combining foot shock punishment with brain stimulation were investigated. Diazepam caused a marked increase in the lever-pressing response in the punished period without affecting the unpunished response. Bromazepam also caused an increase in the lever-pressing response in the punished period and a decrease of the punished response. These results indicate that a conflict situation based on self-stimulation behavior is useful for the evaluation of antianxiety action. 11 references. (Author abstract modified)

003005 Gonzalez, Larry P.; Ellinwood, Everett H., Jr. Dept. of Physiology and Biophysics, University of Illinois Medical Center, P.O. Box 6998, Chicago, IL 60680 **Amphetamine-induced motility and nigrostriatal impulse flow.** Brain Research. 208(1):223-226, 1981.

The effects of altered nigrostriatal impulse flow on amphetamine induced behaviors were investigated in rats. Systemic amphetamine produced a general increase in power at all observed frequencies, with a dose dependent increase in motility in the 8 to 10 Hz frequency band. These responses, a general increase in power and the occurrence of an 8 to 10 Hz peak, were not significantly altered by the intranigral administration of saline or apomorphine, nor did such treatment alone affect motility. Results question the involvement of nigrostriatal impulse flow in the effects of amphetamine on motility, and they suggest the need for further investigation into the function of the nigrostriatal dopaminergic neurons and their relationship to the mechanism of action of amphetamine. 19 references. (Author abstract modified)

003006 Haber, Suzanne; Barchas, Patricia R.; Barchas, Jack D. Dept. of Psychology, Massachusetts Institute of Technology, 79 Amherst St., Cambridge, MA 02139 **A primate analogue of amphetamine-induced behaviors in humans.** Biological Psychiatry. 16(2):181-196, 1981.

The effects of amphetamine on individual and social behaviors were studied in two colonies of rhesus monkeys. After an initial baseline period, each animal, in turn, received low chronic drug administration for 3 weeks. Between each drug period new baseline data were collected. During amphetamine administration, there was a significant increase in the following behaviors: time spent in tense" postures, frequency of orienting, and frequency of agonistic behaviors. In addition, significant changes were seen in the time spent in proximity with other members of the group. The results are discussed both in terms of across animal changes and with regard to social factors, rank in the hierarchy, and affiliative relationships. 16 references. (Author abstract)

003007 Haber, Suzanne; Kraemer, Helena. Dept. of Psychology and Brain Science, Massachusetts Institute of Technology, Cambridge, MA 02139 **A research paradigm to investigate the effect of manipulation on social behavior in groups.** Journal of Psychiatric Research. 16(1):23-28, 1981.

A paradigm for the design and analysis of studies of the effects of biological manipulation on the behavior of animals living in social groups is presented. Such studies are typically based on small sample sizes but such small sample designs are subject to both bias and to low power. The proposed design isolates bias due to time trends, and because of its systematic construction, minimizes bias due to other factors. Use of nonparametric analytic procedures reduces the possibility of statistical biases. Because of the requirement of acceptable reliability of observation at the outset and of repeated measures in the design, the power of the procedure is substantially amplified. This procedure is illustrated in a study of the behavioral effects of chronic amphetamine treatment in monkeys on the frequency of sitting tense, a paranoid like behavior. 8 references. (Author abstract modified)

003008 Hara, Shuichi; Satoh, Tetsuo; Kitagawa, Haruo. Satoh: Laboratory of Biochemical Pharmacology and Biotoxicology, Faculty of Pharmaceutical Sciences, Chiba University, Chiba, Japan **Induction of hypersensitivity of brain by hydralazine treatment in rats.** Research Communications in Chemical Pathology and Pharmacology. 31(2):251-257, 1981.

Hypnosis induced by i.p. injection of 80mg/kg hexobarbital or intracerebroventricular injection of 1mg phenobarbital in male Wistar rats was prolonged by pretreatment with hydralazine (10mg/kg i.p.). Brain concentration of hexobarbital was lower in animals treated with hydralazine than in controls, but liver microsomal drug metabolizing enzyme activities were not altered by hydralazine. Results suggest that hydralazine increases the sensitivity of the brain to barbiturates. 6 references. (Author abstract modified)

003009 Henning, James M.; Zentall, Thomas R. Zentall: Dept. of Psychology, University of Kentucky, Lexington, KY 40506 **Imitation, social facilitation, and the effects of ACTH4-10 on rats' bar-pressing behavior.** American Journal of Psychology. 94(1):125-134, 1981.

The effects of ACTH4-10 on rats' imitation learning was examined during the acquisition and extinction of a bar-press response for water reinforcement. Ss were exposed to a bar-pressing conspecific, an experimentally naive conspecific, or an empty box during bar-press acquisition. Each S was then exposed to one of the same three conditions during extinction. A 80mcg dose of ACTH4-10 was given to half of the Ss in each group prior to observation. Performance differences during acquisition were generally small, but significant performance differences during extinction were found. Social facilitation was indicated, and an imitation effect was also found. However, there were no significant effects of the hormone, relative to saline controls. 20 references. (Author abstract modified)

003010 Herling, Seymore. University of Michigan **An analysis of specificity of drug-induced changes in drug-reinforced responding. (Ph.D. dissertation).** Dissertation Abstracts International. 41(9):3620-B, 1981. Ann Arbor, Univ. Microfilms No. 8106153, 141p., 1980.

Lever-pressing was maintained in rhesus monkeys by the presentation of food and, in alternate periods of each daily session, by the intravenous delivery of either cocaine or codeine. At appropriate doses, cocaine and codeine maintained rates of responding as high as those maintained by food. Chlorpromazine decreased responding maintained by low to intermediate doses of cocaine. Injections of naltrexone produced a dose related shift to the right in the rate decreasing effect of codeine. It is suggested that the effect of naltrexone on codeine reinforced responding are relatively more specific than the effects of chlorpromazine on cocaine reinforced responding. (Journal abstract modified)

003011 Herman, Barbara H.; Panksepp, Jaak. Panksepp: Dept. of Psychology, Bowling Green State University, Bowling Green, OH 43403 **Ascending endorphin inhibition of distress vocalization.** Science 211(4486):1060-1062, 1981.

The effects of naloxone and periventricular gray (PVG) stimulation on distress vocalizations elicited from the septum/preoptic area and the dorsomedial thalamus were analyzed in adult albino guinea-pigs. Both forebrain derived vocalizations were increased by systemic administration of naloxone and were inhibited by analgesic periventricular gray stimulation. Naloxone blocked the inhibitory effects of the analgesic stimulation on thalamic vocalizations. Stimulation of nonanalgesic mesencephalic sites in close proximity to the periventricular gray increased the anterior elicited vocalizations. These data provide evidence for ascending endorphin mediated inhibition of excitatory forebrain sites for distress vocalization. 11 references. (Author abstract modified)

003012 Herndon, James G.; Allen, William C.; Blakely, Randy D. Division of Neurobiology, Yerkes Regional Primate Research Center, Emory University, Atlanta, GA 30322 **Increases in testosterone levels and in copulatory behavior of male rhesus monkeys following treatment with human chorionic gonadotrophin.** Hormones and Behavior. 14(4):337-347, 1980.

The sexual behavior of five male rhesus monkeys were observed before, during, and after administration of human chorionic gonadotropin (HCG) sufficient to induce increases in serum testosterone. Each S received 12 20 min pair tests with an estrogen implanted ovariectomized female during pretreatment, treatment, and posttreatment phases. Grooming, mount latency, and ejaculation frequency, as well as other behavioral measures, were unaffected by hormone treatment. Latency to ejaculation decreased by 40% and mount rate increased by 71% during hormone administration. Sexual presentations by the female decreased by 39% and limb shaking decreased by 55% during treatment. These findings demonstrate that increases in testosterone secretion subsequent to gonadotrophin injection in intact male rhesus monkeys can produce significant alterations in male and female sexual behavior. 17 references. (Author abstract modified)

003013 Hill, Ronald C.; Maurer, Richard; Buescher, Heinz-Hermann; Roemer, Dietmar. Preclinical Research Dept., Sandoz Ltd., CH-4002 Basel, Switzerland **Analgesic properties of the GABA-mimetic THIP.** European Journal of Pharmacology. 69(2):221-224, 1981.

The analgesic properties of the muscimol analogue 4,5,6,7-tetrahydroisoxazolo(5,4-c)pyridin-3-o1 (THIP) were compared with those of baclofen, morphine, and muscimol in rats, mice, and rhesus monkeys. THIP was active orally and parenterally and showed a qualitative resemblance to muscimol in action. Quantitatively, THIP and baclofen were 2 to 3 times less potent than morphine and 5 to 15 times less potent than muscimol. The analgesic effects of THIP, baclofen, and muscimol were not reversed by naloxone or bicuculline. 11 references. (Author abstract modified)

003014 Hoddes, E. S. St. Mary's Hospital, Medical Center, San Francisco, CA **Effect of growth hormone on memory in mice.** Sleep. 1:287-297, 1979.

The effects of growth hormone (GH) on long-term memory were investigated in two experiments using a common paradigm. Mice received massed training on a discrimination task and were injected with GH or control substances before and/or after training. Retention was measured 4 weeks later. In Experiment 1, different groups were injected with either GH or saline at five time points relative to original learning (OL). The results showed a significant quadratic trend in the form of a U-shaped curve for the GH injected groups at retention. Maximal retention was observed in the 90 minute pre-OL and 30 minute post-OL injection groups. Poorest retention was shown by the 5 minute pre-OL injection group. In Experiment 2, GH, saline, and thyroid stimulating hormone were administered at 90 minutes and 5 minutes pre-OL. The results again showed a severe drop in retention when GH was administered 5 minutes before OL. The overall findings indicate a selectively GH induced suppression of memory when GH is administered in close proximity to OL. As the time lapse between injection of drug and the learning task increases, the inhibitory effect on memory is reversed. (Journal abstract modified)

003015 Hoebel, Bartley G.; Hernandez, Luis; Monaco, Anthony P.; Miller, William C. Dept. of Psychology, Princeton University, Princeton, NJ 08544 **Amphetamine-induced overeating and overweight in rats.** Life Sciences. 28(1):77-82, 1981.

The effects of a single large dose of d-amphetamine on food intake and bodyweight maintenance were investigated. Female rats given a large dose of d-amphetamine displayed transient anorexia and loss of weight as one would expect. A week later, after their food intake and weight had returned to baseline, they began to overeat and gain weight. Within three weeks they were eating 7% more than normal. They became 3% overweight with a 5% increase in body fat. They hyperphagia persisted for two months. Thus, amphetamine, an appetite suppressant and sympathomimetic drug, can cause prolonged hyperphagia and mild obesity with delayed onset following a single overdose. 13 references. (Author abstract modified)

003016 Hunt, Glenn E.; Atrens, Dale M.; Johnson, Gordon F. S. Dept. of Psychiatry, University of Sydney, Sydney, 2006, N.S.W., Australia **The tetracyclic antidepressant mianserin: evaluation of its blockade of presynaptic alpha-adrenoceptors in a self-stimulation model using clonidine.** European Journal of Pharmacology. 70(1):59-63, 1981.

The effects of mianserin, a tetracyclic antidepressant, were investigated in male Sprague-Dawley rats in a shuttlebox self-stimulation model sensitive to alpha-adrenergic drugs. Mianserin (2.5 to 40.Omg/kg i.p.) not only failed to enhance hypothalamic self-stimulation, but produced a selective inhibition of reward. Mianserin also failed to reverse the inhibitory effects of clonidine on self-stimulation. Results suggest that mianserin is not a selective antagonist of presynaptic alpha-adrenoceptors. 23 references. (Author abstract modified)

003017 Irving, S. M.; Goy, R. W.; Haning, R. V.; Davis, G. A. Davis: Wisconsin Regional Primate Research Center, University of Wisconsin, Madison, WI 53706 **Prostaglandins, clonidine and sexual receptivity in the guinea-pig.** Brain Research. 204(1):65-77, 1981.

The effects of prostaglandins on sexual receptivity in the guinea-pig were investigated. Prostaglandins E1 and F2alpha suppressed lordosis in ovariectomized guinea-pigs brought into estrus with estradiol benzoate and progesterone. Pretreatment with clonidine prevented this action of the prostaglandins, but if the animals were first given prostaglandin and allowed to go out of estrus, then clonidine did not restore lordosis. In a previous study, it was found that the abbreviation of estrus induced by copulation was also blocked by clonidine, again only if it were given before the inhibitory treatment. These results suggest that prostaglandin, perhaps released from the female reproductive tract, could mediate the inhibitory effect of copulation, and radioimmunoassays of prostaglandin F2alpha and its principal metabolite PGFM revealed substantial elevations in the concentrations of these materials in trunk blood after copulation. The possibility that prostaglandins may suppress sexual receptivity by interfering with an alpha-adrenergic mechanism is discussed. 39 references. (Author abstract modified)

003018 Jacobs, Barry L.; Heym, James; Trulson, Michael E. Program in Neuroscience, Dept. of Psychology, Princeton University, Princeton, NJ 08544 **Cats develop tolerance to d-amphetamine's effects upon locomotion and stereotyped behaviors.** European Journal of Pharmacology. 69(3):353-356, 1981.

Administration of d-amphetamine sulfate (7.5mg/kg i.p) twice daily to cats produced an initial large increase in locomotion and behavioral stereotypy. However, both measures showed large decreases when the d-amphetamine regimen was continued for more than 3 days. It is suggested that tolerance to the behavioral effects of d-amphetamine is due to the concomitant decrease in presynaptic stores of dopamine and norepinephrine. 7 references. (Author abstract modified)

003019 Jones, D. L.; Mogenson, G. J.; Wu, M. Dept. of Physiology, Faculty of Medicine, University of Western Ontario, London, Ontario, Canada N6A 5C1 **Injections of dopaminergic, cholinergic, serotoninergic and GABAergic drugs into the nucleus accumbens: effects on locomotor activity in the rat.** Neuropharmacology. 20(1):29-37, 1981.

The effects on locomotor activity in the rat of injections of dopaminergic, cholinergic, serotoninergic, and GABAergic drugs into the nucleus accumbens were investigated. Dopamine (which elicited locomotor activity) was injected together with cholinergic, serotonergic, and GABAergic agonists and antagonists to investigate the possible contribution to locomotor activity of these putative neurotransmitters. Carbachol elicited a transient enhancement of dopamine stimulated activity. Atropine attenuated carbachol stimulated enhancement but did not attenuate dopamine stimulated activity. Serotonin attenuated dopamine stimulated activity. The administration of GABA elicited a bimodal response in locomotion. Results suggest that there is not a cholinergic interneuron on the dopamine stimulated pathway subserving locomotion but that both cholinergic and serotoninergic projections may modulate locomotor activity. Further, they suggest that such modulation must be at least one inhibitory interneuron away from the dopamine synapse on the loco-

motor pathway. In addition, these results suggest a direct influence of GABAergic interneurons on the pathway subserving locomotor activity within the nucleus accumbens. 56 references. (Author abstract modified)

003020 Kameyama, T.; Ukai, M. Dept. of Chemical Pharmacology, Faculty of Pharmaceutical Sciences, Meijo University, Nagoya 468, Japan **Multi-dimensional analyses of behavior in mice treated with alpha-endorphin.** Neuropharmacology. 20(3):247-250, 1981.

A multidimensional behavioral analyzer based on a capacitance system was used to study the effects of intracerebral injection of alpha-endorphin on spontaneous locomotor activity in male ddY mice. Alpha-endorphin (20mcg) caused a marked but transient increase in linear locomotion, which could be reversed by naloxone. Intracerebral injection of alpha-endorphin also facilitated the hyperactive movements induced by apomorphine and methamphetamine, suggesting that alpha-endorphin may enhance dopaminergic activity. 19 references. (Author abstract modified)

003021 Kantak, Kathleen M.; Hegstrand, Linda R.; Eichelman, Burr. Eichelman: Psychiatry Service, William S. Middleton Memorial Veterans Hospital, 2500 Overlook Terrace, Madison, WI 53705 **Aggression-altering effects of cyclic AMP.** Neuropharmacology. 20(1):79-82, 1981.

Dibutyryl cyclic AMP, infused intraventricularly in rats and mice, was found to produce dose dependent increases in cyclic AMP and dose dependent decreases in shock induced rat fighting and isolation induced mouse fighting and cricket attack, but not in cricket killing or mousekilling. Reduction in aggression with 25mcg was not related to sedation or motor disturbance since motor activity counts were normal, as were whole brain levels of serotonin, norepinephrine, and dopamine. These data are consistent with the hypothesis that neuronal cyclic AMP, in part, functions as a second messenger mediating the effects of released neurotransmitters in regulating behavior. 10 references. (Author abstract modified)

003022 Karson, Craig N.; Staub, Richard A.; Kleinman, Joel E.; Wyatt, Richard Jed. Adult Psychiatry Branch, Division of Special Mental Health Research, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Blink rates and receptor supersensitivity.** Neuropharmacology. 20(1):91-93, 1981.

The dose response of blink rates to apomorphine was studied before and after haloperidol treatment in four monkeys. Seven days following haloperidol discontinuation, there was no alteration of baseline blink rates but the blink rate response to low dose apomorphine was significantly increased indicating that haloperidol treatment had sensitized the animals. Because the major action of neuroleptics on dopamine neurons is thought to be postsynaptic blockade, it is speculated that postsynaptic supersensitivity of dopamine receptors is the etiology of increased sensitivity in these monkeys. It is claimed that blink rates, because they are easily quantifiable, seem to be a promising tool in the study of neurochemical mechanisms. 10 references. (Author abstract modified)

003023 Karson, Craig N.; Staub, Richard A.; Kleinman, Joel E.; Wyatt, Richard J. Lab. of Clin. Psychopharmacology, Div. of Special Mental Health Research, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Drug effect on blink rates in rhesus monkeys: preliminary studies.** Biological Psychiatry. 16(3):249-254, 1981.

Various drugs that alter central monoamine activity were given to rhesus monkeys to determine the effects on blink rates. Chronic pargyline treatment raised the mean plus or minus standard deviation blink rate slightly to 18.2 plus or minus 5.3 blinks/90 sec. When phenylethylamine was added to chronic pargyline treatment, blinks increased from a baseline of 16.8 plus or minus 7.6 blinks/90 sec to 37 plus or minus 15 blinks/90 sec. Apomorphine (.36mg/kg) raised blinks from a baseline of 12.2 plus or minus 2.8 blinks/90 sec to 41.9 plus or minus 10.3 blinks/90 sec and reversed a decrease in blinking caused by haloperidol. The neurochemical basis of blinking and implications for tardive dyskinesia are discussed. 12 references. (Author abstract)

003024 Kasamatsu, Takuji; Pettigrew, John D.; Ary, Marylouise. Division of Biology, 216-76 Beckman Laboratories, California Institute of Technology, Pasadena, CA 91125 **Cortical recovery from effects of monocular deprivation: acceleration with norepinephrine and suppression with 6-hydroxydopamine.** Journal of Neurophysiology. 45(2):254-266, 1981.

The effects of continuous microperfusion of the visual cortex with either norepinephrine (NE) or 6-hydroxydopamine (6-OHDA) were studied in young kittens that had been monocularly deprived at 4 weeks of age for a week and then allowed to use both eyes for various times after reopening of the closed eyelid. The time course of recovery of the normal ocular dominance distribution in these two experimental conditions was compared with that of control kittens that had similar visual experience. The recovery of binocular cortical cells from the effects of the brief monocular deprivation was accelerated by concomitant, continuous perfusion of NE, and largely delayed in the visual cortex that had been depleted of its catecholamine terminals by perfusion of 6-OHDA. 32 references. (Author abstract modified)

003025 Kasarskis, Edward J.; Karpiak, Stephen E.; Rapport, Maurice M.; Yu, Robert K.; Bass, Norman H. Dept. of Neurology, University of Kentucky, Albert B. Chandler Medical Center, Lexington, KY 40536 **Abnormal maturation of cerebral cortex and behavioral deficit in adult rats after neonatal administration of antibodies to ganglioside.** Developmental Brain Research. 1(1):25-35, 1981.

Abnormal maturation of the cerebral cortex and behavioral deficit in adult rats after neonatal administration of antibodies to ganglioside is described. Five-day-old rats received a single injection of antiserum to ganglioside into the cisterna magna and were compared to control animals injected with the antiserum which had been absorbed with pure GM1 ganglioside to remove the specific antibodies. Both groups showed normal rates of body growth. However, animals receiving antiganglioside serum had, at 60 days of age, impaired performance when tested on a complex learning task (DRL) as well as chemical and morphological alterations on the somatosensory cerebral cortex. Results suggest that antibodies to GM1 ganglioside interfere with optimal neonatal development of both dendrites and myelin in cerebaral cortex. Results provide an animal model in which an immunologically mediated disturbance of cortical development is associated with chronic behavioral impairment. 34 references. (Author abstract modified)

003026 Kavaliers, Martin; Hawkins, Mike F. Dept. of Zoology, University of Western Ontario, London, Ontario N6A 5B7, Canada **Bombesin alters behavioral thermoregulation in fish.** Life Sciences. 28(12):1361-1364, 1981.

Bombesin was microinjected into the ventricular system of a teleost fish, Catostomus commersoni, to evaluate its effects on behavioral thermoregulation in a horizontal thermal gradient. General locomotor activity was also examined. Results demonstrate that bombesin decreased the behaviorally selected internal body temperatures by 5 to 7 degrees C relative to controls and

that the latency of the response was dose dependent. The peptide did not change locomotor activity. Results are discussed in relation to body temeprature setpoint(s) and possible implications for endotherm thermoregulation. 6 references. (Author abstract)

003027 Kawasaki, Kazuo; Matsushita, Akira. Division of Pharmacology, Shionogi Research Laboratories, Shionogi and Co., Ltd., Fukushima-ku, Osaka 553, Japan **Sensitive depressant effect of benzodiazepines on the crossed extensor reflex in chloralose-anesthetized rats.** Life Sciences. 28(12):1391-1398, 1981.

Benzodiazepine derivatives doses dependently depressed the crossed extensor reflex (CER) in the hind lib of chloralose anesthetized rats when administered in very small doses that did not cause any behavioral and electrophysiological changes in other reported tests. Only medazepam showed a characteristic biphasic inhibition, a transient and weak inhibition followed by a long lasting inhibition. The effects of benzodiazepines were clearly antagonized by a subconvulsive dose of bicuculline, but not by strychnine. The ED50 values of diazepam, estazolam, nitrazepam, medazepam, and chlordiazepoxide in inhibiting the CER very closely correlated with their documented potencies in displacing 3H-diazepam binding to rat brain benzodiazepine receptors. Results suggest that the CER inhibition by benzodiazepines is mediated by GABAergic transmission and the CER in chloralose anesthetized rat can be used as a favorable indicator to detect the action of BZ via interactions with benzodiazepine receptors in vivo. 23 references. (Author abstract modified)

003028 Keresztes-Nagy, Patricia; Rosenfeld, J. Peter. Rosenfeld: Dept. of Psychology, Cresap Neuroscience Laboratory, Northwestern University, Evanston, IL 60201 **Naloxone-reversible duplication by lanthanum of opiate analgesia effects on orofacial, lower body and central nociception.** Brain Research. 208(1):234-239, 1981.

Antagonisms of analgesia for tail flick and paw lick (hotplate) reactions in rats were examined using intracranially microinjected lanthanum (La3) in midbrain ventrolateral central gray. Also examined were La3 effects on orofacial pain (and its possible reversal by naloxone) and La3 effects on aversive dorsal midbrain stimulation. La3 induced responses were compared with characteristic opiate analgesia effects. The data extend earlier studies of La3 analgesia by demonstrating four new effects of central gray La3 microinjection previously reported with opiates: 1) profound effects on orofacial thermal nociception; 2) significant analgesic effects on tail flick and hotplate tests, which were nevertheless significantly smaller than effects on face rub tests; 3) no effect on aversive reaction threshold to midbrain stimulation (using a La3 dose effectively analgesic for peripheral nociception); and 4) total naloxone and Ca2 reversibility of all analgesia. 20 references.

003029 King, William Blackstone, Jr. University of California, Los Angeles **Long lasting effects of chronic administration of hallucinogenic drugs on rat social and emotional behavior. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3224-B, 1981. Ann Arbor, Univ. Microfilms No. 8104008, 107p., 1980.

To test the possibility that hallucinogens can produce experimentally demonstrable, long-lasting alterations in behavior, two experiments were done. In the first, rats received chronic LSD via a subcutaneously implanted delivery system which delivered a total of 80mcg LSD over 7 days or 80mcg LSD in seven equal daily injections or placebo. Thirty days after drug administration only the rats that had received continuous LSD showed long-lasting behavioral alterations, consisting of decreased exploratory behavior in a novel environment and increased social behavior. The second experiment was similar to the first except that rats received a total of 438mcg of 5-methoxy-N,N-dimethyltryptamine instead of the LSD. Behavioral alterations were found 30 days later in both the rats receiving the drug by daily injection and by continuous delivery. Both drug groups showed a decrease in defecation in the social open field; in addition, the injected rats showed an increase in acoustic startle response, while the rats which had received the drug by continuous administration showed an increase in reactivity to handling. Results indicate that chronic hallucinogen administration causes long lasting behavioral changes in rats, but that the nature of the changes depend both upon the drug and the mode of its administration. (Journal abstract modified)

003030 Korczynski, Renard; Fonberg, Elzbieta. Dept. of Neurophysiology, Nencki Institute of Experimental Biology, Pasteura 3, 02-093 Warsaw, Poland **The effects of imipramine treatment on the unconditioned alimentary behavior and classical conditioned salivary reactions in dogs.** Acta Neurobiologiae Experimentalis. 39(3):157-171, 1979.

The effects of imipramine on the unconditioned alimentary behavior and classical conditioned salivary reactions of dogs were investigated. Imipramine decreased both conditioned and unconditioned salivation, but only slightly decreased food intake. In most dogs, increase of general arousal and improvement of social contact was observed. Differentiation of conditioned salivation to CS and CS- was disturbed during imipramine treatment, due to the prominent decrease of conditioned salivary reflexes to CS and increase of reactions to CS-. It is concluded that in the evaluation of the effect of imipramine, one should take into consideration its differential influences on various motor, autonomic, and emotional components, and central and peripheral components of alimentary behaviors. Great intersubject variability was observed. 20 references. (Author abstract modified)

003031 Kovacs, Gabor L.; Szabo, Gyula; Penke, Botond; Telegdy, Gyula. Institute of Pathophysiology, University Medical School, Semmelweis u.1.P.O.B. 531, H-6701 Szeged, Hungary **Effects of cholecystokinin octapeptide on striatal dopamine metabolism and on apomorphine-induced stereotyped cage-climbing in mice.** European Journal of Pharmacology. 69(3):313-319, 1981.

The effects of sulfated and nonsulfated cholecystokinin octapeptide (CCK-8-SE and CCK-8-NS, respectively) on striatal dopamine (DA) metabolism were investigated in male CFLP mice. The disappearance of striatal DA after synthesis inhibition with alpha-methyl-p-tyrosine was facilitated by CCK-8-NS, but not by CCK-8-SE. Neither form of CCK-8 affected in vitro uptake of 3H-DA by striatal slices, but both increased potassium evoked release of 3H-DA from striatal slices. Apomorphine induced stereotyped cage climbing behavior was not affected by CCK-8-SE, but was enhanced by CCK-8-NS; this effect was antagonized by haloperidol, but not by naloxone. Results suggest that CCK-8-NS acts on central dopaminergic mechanisms. 26 references. (Author abstract modified)

003032 Kuribara, Hisashi; Tadokoro, Sakutaro. Div. for Behavior Analysis, Behavior Research Institute, School of Medicine, Gunma University, 3-39-22 Showa-machi, Maebashi 371, Japan **Correlation between antiavoidance activities of antipsychotic drugs in rats and daily clinical doses.** Pharmacology Biochemistry and Behavior. 14(2):181-192, 1981.

The effects of 28 antipsychotic drugs on two types of avoidance responses in rats (Sidman avoidance and discriminated avoidance) were investigated and compared with clinical effects of daily administration of these compounds. Almost all drugs except sulpiride and clozapine suppressed the avoidance responses with a dose dependent decrease in response rate and in-

crease in shock rate in the Sidman avoidance performance or a decrease in both the response and avoidance rates in the discriminated avoidance task. In most cases the potencies of the avoidance suppressing effects of the drugs were well correlated with their clinical daily doses. Results suggest that the avoidance response in rats is applicable in evaluating the clinical efficacies of antipsychotic drugs. 44 references. (Author abstract modified)

003033 Kuruvilla, Alice; Uretsky, Norman J. Dept. of Pharmacology, Cristian Medical College, Vellore, S. India **Effect of sodium valproate on motor function regulated by the activation of GABA receptors.** Psychopharmacology. 72(2):167-172, 1981.

To determine whether GABA can play a functional role in the pharmacological effects of valproate, both valproate and GABA were injected directly into the nucleus accumbens and the substantia nigra, (in male Sprague-Dawley rats) and the effects of these compounds on motor function were studied. Both GABA and sodium valproate inhibited the hyperactivity induced by bilateral injection of dopamine into the nucleus accumbens. Pictrotoxin, a GABA antagonist, blocked the inhibitory effect of valproate. When injected into the pars reticulata of the substantia nigra, both sodium valproate and GABA enhanced apomorphine induced circling in rats with a unilateral lesion of the lateral hypothalamus caused by 6-hydroxydopamine. This effect was blocked by the systemic administration of picrotoxin. Results suggest that sodium valproate can produce effects that result from the activation of GABA receptor sites in the brain. 30 references. (Author abstract modified)

003034 Lahti, Robert A.; Barsuhn, Craig. Upjohn Co., Kalamazoo, MI 49001 **Benzodiazepines, stress and rat plasma corticosteroids: the role of indoleamines.** Research Communications in Psychology, Psychiatry and Behavior. 5(4):369-383, 1980.

Results are reported from studies into the mode of action of the benzodiazepines in preventing elevations in plasma corticosteroids as a result of an applied stress in rats. Studies utilizing elevations in plasma corticosteroids as an indicator of stress did not confirm the postulate that the benzodiazepines exert their anxiolytic activity by blocking serotonergic receptors. The effect of diazepam in blocking stress induced elevation was antagonized by 5-hydroxytryptophan pretreatment in a noncompetitive manner, but the corticosteroid elevating activity of the indoleamine alpha-ethyltryptamine could be reversed by diazepam, and this result was comparable to those described in other behavioral studies used to formulate the hypothesis. Thus it appears that the benzodiazepines exert their clinical effect via an indole system, and that the system is probably not serotonergic. The recent findings of a beta carboline in human urine, which inhibits benzediazepine receptor interactions) supports this view. 8 references. (Author abstract modified)

003035 Larue-Achagiotis, C.; Le Magnen, J. Lab. de Neurophysiologie Sensorielle et Comportementale, College de France, 11, place Marcelin Berthelot, F-75231 Paris Cedex 05, France **Metabolic correlates of the effects of 2-deoxy-D-glucose on meal size and post-meal satiety in rats.** Physiology & Behavior. 26(2):193-196, 1981.

The effects of 2-deoxy-D-glucose (2DG, 250mg/kg i.p.) on meal size and postmeal satiety were studied in male Wistar rats after 0 to 6 hours of food deprivation. In rats treated with 2-DG at night, the size of the first meal was reduced but the postmeal interval was not altered, compared to controls. The reduction in meal size was associated with high levels of plasma glucose (PG) and plasma free fatty acid (PFFA) after the meal or in the absence of food. In animals treated during the day, 2-DG reduced the latency to eat and the meal to meal interval without changing meal size. The acceleration of meal onsets was associated with higher PG and lower PFFA levels 30 minutes after the meal than at the corresponding time at night. 8 references. (Author abstract modified)

003036 Loscher, Wolfgang. Lab. f. Pharmakologie u. Toxikologie, Fachbereich Veterinarmedizin, Freie Universitat Koserstr. 20, D-1000 Berlin 33, West Germany **A comparative study of the pharmacology of inhibitors of GABA-metabolism.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(2):119-128, 1980.

The anticonvulsant, biochemical, and toxic effects of four catalytic inhibitors of GABA-transaminase (gabaculine, gamma-acetylenic-GABA, gamma-vinyl-GABA, and ethanolamine-O-sulphate) were compared with those aminooxyacetic acid (AOAA) and sodium valproate (VPA) in male NMRI mice. The effects of gabaculine, gamma-acetylenic-GABA, and gamma-vinyl-GABA were nonspecific. Gamma-acetylenic-GABA, gamma-vinyl-GABA, and ethanolamine-O-sulphate had only weak anticonvulsant potency. AOAA and gabaculine were toxic or lethal at anticonvulsant doses. VPA was the only drug tested that showed satisfactory anticonvulsant potency with relatively low toxicity. It is concluded that GABA-transaminase inhibitors are not suitable for treatment of convulsive disorders in humans, but may be useful tools for manipulating brain GABA levels in studies of experimental epilepsy. 50 references. (Author abstract modified)

003037 Luttinger, D.; Nemeroff, C. B.; Mason, G. A.; Frye, G. D.; Breese, G. R.; Prange, A. J., Jr. Biological Sciences Research Center, University of North Carolina School of Medicine, Chapel Hill, NC 27514 **Enhancement of ethanol-induced sedation and hypothermia by centrally administered neurotensin, beta-endorphin and bombesin.** Neuropharmacology. 20(3):305-309, 1981.

The duration of sedation induced by 5.2g/kg ethanol in male Swiss-Webster mice was potentiated by intracisternal administration of neurotensin, beta-endorphin, or bombesin. The enhancement of ethanol induced sedation was correlated with the potentiation of ethanol induced hypothermia for all three endogenous neuropeptides. Since no dose of the three neuropeptides administered alone produced loss of the righting reflex, it is concluded that the enhancement of ethanol induced sleep by the these neuropeptides is probably not due to the summation of sedative effects. None of the neuropeptides significantly altered blood or brain ethanol concentrations. 17 references. (Author abstract modified)

003038 Lyness, W. H.; Mycek, Mary J. Dept. of Pharmacology and Therapeutics, Texas Tech University, Lubbock, TX 79430 **Potentiation of barbiturate hypnosis by probenecid: differential effect in tolerant animals.** Neuropharmacology. 20(3):217-226, 1981.

Probenecid (200mg/kg i.p.) potentiated the hypnotic effect of intracerebroventricular (i.c.v.) phenobarbital and delayed the efflux of phenobarbital from the brains of male Sprague-Dawley rats. Probenecid was used to investigate whether acid transport participates in the elimination of i.c.v. phenobarbitol, with the expectation that this might increase the duration of loss of righting reflex. The duration of phenobarbital hypnosis increased from 14.4 to 26.4 min in naive rats and from 2.1 to 25.5 min in rats made tolerant to phenobarbital. The potentiation of phenobarbital hypnosis could not be attributed to the sedative effects of probenecid. Probenecid also prolonged hypnosis produced by i.c.v. injection of barbital or i.p. injection of hexobarbital, and did not decrease the metabolism of hexobarbital. 28 references. (Author abstract modified)

003039 Mares, P.; Schickerova, R. Institute of Physiology, CSAV, Videnska 1083, CS-142 20 Praha, Czechoslovakia **Seizures elicited by subcutaneous injection of metrazol during ontogenesis in rats.** Activitas Nervosa Superior. 22(4):264-268, 1980.

Metrazol administered subcutaneously at a dose of 8mg/kg was found to elicit genuine minimal seizures (predominantly clonic) in adult, 45-day-old rats and 25-day-old rats. The same dose of metrazol resulted in long-lasting generalized tonic/clonic seizures in rats aged 5 days and younger. Eighteen-day-old rats represented a transitory stage in which both types of seizures were present: minor seizures at first and then, after a short resting period, major seizures. The different seizure pattern in young rats was not induced by their higher sensitivity to metrazol, but was caused by the level of neural maturation. 14 references. (Author abstract modified)

003040 Maricq, Andres V.; Roberts, Seth; Church, Russell M. Church: Dept. of Psychology, Brown University, Providence, RI 02912 **Methamphetamine and time estimation.** Journal of Experimental Psychology: Animal Behavior Processes. 7(1):18-30, 1981.

The effect of methamphetamine on the performance of rats in two timing tasks was studied in three experiments. When food sometimes followed the first response after 20 seconds of a signal, the response rate increased to a peak near 20 seconds and then declined. Methamphetamine decreased the time of the peak. When one response (a short response) was reinforced following a short signal and a different response (long response) was reinforced following a long signal, the probability of a long response increased as a function of signal duration. (The short and long signals were 1 and 4, 2 and 8, or 4 and 16 seconds. The point of indifference (50% long response) occurred near the geometric mean of the extreme durations, and methamphetamine decreased the point of indifference by about 10%. The results suggest that methamphetamine icreases the speed of an internal clock used by rats in time discrimination tasks. 28 references. (Author abstract modified)

003041 Maroli, Allan Norman. University of Cincinnati **Influence of morphine on the discriminative stimulus properties of rewarding lateral hypothalamic stimulation. (Ph.D. dissertation).** Dissertation Abstract International. 41(7):2816-B, 1981. Ann Arbor, Univ. Microfilms No. 8029680, 56p., 1980.

Intensity related changes produced by morphine in the discriminative stimulus complex of rewarding lateral hypothalamic stimulation were assessed in male albino rats. Animals were capable of differentiating extremely small intensity changes of brain stimulation as a difference of 6 mua was sufficient to yield reliable discriminative responding. Morphine was found to alter the generalization gradient in an orderly way, producing a statistically significant increase in the incidence of responding on the low intensity appropriate level. At the time and drug dosage parameters employed morphine also yielded a statistically significant increase in self-stimulation rates. Results suggest that morphine may attenuate some intensive dimension of the discriminative stimulus complex of rewarding lateral hypothalamic stimulation. The possibility that morphine's characteristic facilitative effect on self-stimulation behavior may result from the suppression of an aversive concomitant of the brain stimulation is discussed. (Journal abstract modified)

003042 Martin, James R.; Overstreet, David H.; Driscoll, Peter; Battig, Karl. Behavioral Science Institute, Behavioral Biology Lab., Swiss Federal Institute of Technology, E.T.H.Z., CH-8092 Zurich, Switzerland **Effects of scopolamine, pilocarpine, and oxotremorine on the exploratory behavior of two psychogenetically selected lines of rats in a complex maze.** Psychopharmacology. 72(2):135-142, 1981.

Rats of two psychogenetically selected lines received pretest i.p. injections of scopolamine, pilocarpine, or oxotremorine and were subsequently placed in a complex enclosed maze of the Dashiell type that included a small, central, illuminated arena. Following vehicle injections, Roman high avoidance rats (RHA/Verh) were significantly more active, explored more maze sectors, and required less time to activate the initial 24 different photocells uniformly distributed throughout the maze than did Roman low avoidance rats (RLA/Verh). Results following drug administration suggest that the two rat strains are differentially sensitive to central cholinergic manipulation with the muscarinic receptor agonists pilocarpine and oxotremorine. The data demonstrate that manipulation of the central cholinergic system with scopolamine, pilocarpine, or oxotremorine, despite their different pharmacological mechanisms, impairs maze patrolling behavior. 43 references. (Author abstract modified)

003043 Martinez-Roldan, C.; Garrido-Garcia, J. Laboratorios MADE, S.A., Madrid, Spain /**Protective action of L-5-hydroxytryptophan L-glutamate (MADE-1932) during electroshock treatment (ECT)**./ Accion protectora del L-glutamato de L-5 hidroxitriptofano (MADE-1932) frente al electrochoque (TEC). Revista de Psiquiatria y Psicologia Medica de Europa etc. 14(5):59-68, 1980.

The protective action of L-5 hydroxytryptophan L-glutamate (MADE-1932) during electroshock treatment was studied. A sample of 40 rats was divided into four groups of 10 rats each. The first group (control) received a placebo, while the second, third, and fourth groups were administered 5, 10, and 20mg/kg of the drug, respectively. All four groups were then given electroshock in rising voltages (50 to 80). Results show that the control group presented clonic convulsions. The other groups were protected significantly from death and convulsions. This protective action of MADE-1932 demonstrates dose dependency. (Journal abstract modified)

003044 Masserano, Joseph M.; King, Carl. King: Dept. of Pharmacology, Louisiana State University, School of Medicine, 1542 Tulane Ave., New Orleans, LA 70112 **TRH increases locomotor activity in rats after injection into the hypothalamus.** European Journal of Pharmacology. 69(2):217-219, 1981.

Bilateral injections of thyrotropin releasing hormone (TRH, 2mcg) into the hypothalamus of male Sprague-Dawley rats increased locomotor activity. No increase in locomotor activity was seen after bilateral injections of TRH into the caudate nucleus or septum. 8 references. (Author abstract modified)

003045 Matthews, William D.; Intoccia, Alfred P.; Osborne, Virginia L.; McCafferty, Gerald P. Dept. of Pharmacology, F-60, Smith Kline and French Laboratories, Philadelphia, PA 19101 **Correlation of (14C)muscimol concentration in rat brain with anticonvulsant activity.** European Journal of Pharmacology. 69(3):249-254, 1981.

Brain levels of (14C)muscimol and anticonvulsant activity against bicuculline were studied in male Sprague-Dawley rats after i.v. injection of 0.25 to 2.0mg/kg labeled muscimol. Peak brain concentrations of (14C)muscimol and maximal protection against bicuculline induced seizures occurred simultaneously, 30 minutes after injection. The half-life for the disappearance of (14C)muscimol was 117 minutes, compared to a half-life of 119 minutes for the decrease in anticonvulsant activity. Results indicate that the labeled GABA agonist penetrates the brain rapidly after i.v. injection and that unchanged muscimol (rather than a

metabolite) antagonizes seizures induced by the GABA antagonist bicuculline. 13 references. (Author abstract modified)

003046 McCleary, Philip E.; Leander, J. David. Leander: Dept. of Pharmacology, University of North Carolina, School of Medicine 231-H, Chapel Hill, NC 27514 **Clonidine analgesia and suppression of operant responding: dissociation of mechanism.** European Journal of Pharmacology. 69(1):63-69, 1981.

The effects of clonidine and xylazine on analgesia (tail withdrawal from hot water) and on operant responding maintained by a fixed-ratio 20 response schedule of food presentation were compared in male Long-Evans hooded rats. Clonidine (2 to 8mg/kg) produced dose dependent increases in tail withdrawal latency and was about twice as potent as xylazine (8 to 16mg/kg). Clonidine (0.0063 to 0.2mg/kg) and xylazine (0.25 to 8mg/kg) both produced dose dependent suppression of fixed-ratio responding, but clonidine was about 40 times more potent than xylazine. The interaction of clonidine with yohimbine, phenoxybenzamine, and nisoxetine indicated that clonidine exerts its effects on tail withdrawal latency and operant behavior through separate mechanisms. Stimulation of postsynaptic alpha-adrenoceptors appears to be a significant component of clonidine induced analgesia, whereas behavioral suppression appears to be mediated by presynaptic receptors on noradrenergic neurons or by adrenergic receptors. 25 references. (Author abstract modified)

003047 McGivney, William Thomas. University of North Carolina at Chapel Hill **A characterization of the behavioral effects of levo-alpha-acetylmethadol in the rat and in the pigeon. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):2995-B, 1981. Ann Arbor, Univ. Microfilms No. 8104409, 176p., 1980.

The effects of levo-alpha-acetylmethadol (LAAM) and its proposed active metabolites, levo-alpha-noracetylmethadol (N-LAAM) and levo-alpha-dinoracetylmethadol (DN-LAAM), on schedule controlled responding in the rat and in the pigeon were examined. LAAM's behavioral effects were compared with those observed after the administration of methadone. Results demonstrate that LAAM possessed many of the behavioral characteristics of the opioids. LAAM increases rates of responding under the fixed-interval component in both the rat and the pigeon, while, at higher doses, it decreases rates of responding under both fixed-interval and fixed-ratio components. Tolerance developed in the rate decreasing effects of LAAM, and physical dependence was produced by the chronic administration of LAAM in the rat. Oral LAAM was about twofold more potent in producing alterations in schedule controlled behavior than oral methadone in the rat, while in the pigeon, the two drugs were equipotent. LAAM's behavioral effects were characterized by a longer duration of action than those of methadone. The suggestion that LAAM's effects are attributable to its metabolic conversion to more active compounds was evaluated. The potency and duration of action of these metabolites suggest that they contribute importantly to the behavioral effects observed after the administration of the parent compound. (Journal abstract modified)

003048 McGlone, John J.; Kelley, Keith W.; Gaskins, Charles T. Dept. of Animal Science, Washington State University, Pullman, WA 99164 **Lithium and porcine aggression.** Journal of Animal Science. 51(2):447-455, 1981.

One hundred and forty eight growing pigs were used in four experiments conducted to determine the effect of lithium (Li) on the level of aggression among newly mixed, previously unacquainted pigs. Pigs maintained on low levels of dietary Li attained serum Li concentrations of .1mEq/liter to .7mEq/liter. At these low serum levels, biting activity was consistently lower than it was among control pigs, although the difference was usually not statistically significant. Low levels of dietary Li did not significantly affect the rate of gain or feed efficiency. When high concentrations of serum Li were achieved by an intraperitoneal injection, pig aggression was reduced to almost zero for 10 hours postmixing. This effect probably is due to drug induced malaise associated with potentially toxic serum Li concentrations. These data suggest that Li can substantially reduce aggression among pigs that are unfamiliar with each other. 27 references. (Author abstract modified)

003049 Merkel, A. D.; Wayner, M. J.; Jolicoeur, F. B.; Mintz, R. Wayner: Brain Research Lab., Syracuse University, 601 University Ave., Syracuse, NY 13210 **Effects of caffeine administration on food and water consumption under various experimental conditions.** Pharmacology Biochemistry and Behavior. 14(2):235-240, 1981.

The effects of caffeine on food and water intake were assessed in rats maintained under several experimental conditions. In Experiment 1, caffeine, was injected into 23 hour food deprived Ss, 23 hour water deprived Ss, or ad lib feeding and drinking Ss. In Experiment 2, animals were adapted to a 21 hour food deprivation schedule and administered the same doses of caffeine as were used in Experiment 1. Results indicate that caffeine both enhances and decreases food and water intake and that the effects observed depend on the experimental circumstances. 27 references. (Author abstract modified)

003050 Meszaros, J.; Tarchalska, B.; Gajewska, S.; Janicki, P.; Duriasz, H.; Szreniawski, Z. Dept. of Pharmacology, Institute of Physiological Sciences, Warsaw Medical Academy, 00-927 Warsaw, Poland **Substance P, hexapeptide pGlu6(SP6-11), analgesia and serotonin depletion.** Pharmacology Biochemistry and Behavior. 14(1):11-15, 1981.

Substance-P had marked analgesic activity after intraventricular administration in male Wistar rats and after i.p. injection in male Swiss mice. The hexapeptide pGlu6(SP6-11) had analgesic effects in mice but not in rats. Depletion of serotonin with p-chlorophenylalanine abolished the antinociceptive activity in mice, but not in rats. Lesion of the raphe nuclei blocked the activity of substance-P in rats. Results suggest that serotonergic mechanisms may be more important in pain control in mice than in rats. 11 references. (Author abstract modified)

003051 Micheau, Jacques; Destrade, Claude; Soumireu-Mourat, Bernard. Soumireu-Mourat: Laboratoire de Neurobiologie des Comportements Universite de Provence, F-13397 Marseille Cedex 13, France **Intraventricular corticosterone injection facilitates memory of an appetitive discriminative task in mice.** Behavioral and Neural Biology. 31(1):100-104, 1981.

The effect of 1.0mcg of corticosterone on memory consolidation of two appetitive tasks was examined in mice. The immediate posttraining injection into the cerebral ventricles did not affect memory consolidation of a continuously reinforced operant condition task. Using a discriminative operant conditioning procedure with the same Skinner box, this treatment facilitated retention. These results suggest that memory consolidation of adaptive behaviors can be modulated through interaction between central nervous structures and the pituitary adrenal axis. 5 references. (Author abstract modified)

003052 Miczek, Klaus A. Tufts University, Medford, MA 02115 **Pharmacological evidence for catecholamine involvement in animal aggression.** Psychopharmacology Bulletin. 17(1):60-62, 1981.

Pharmacological evidence for catecholamine involvement in animal aggression is reviewed. Studies indicate that pharmacological manipulations of brain catecholamies can have profound, mostly disruptive, effects on attack and threat behavior; comparable changes are seen in defensive and flight reactions as well as affiliative behavior. The primary behavioral change due to catecholamine manipulations seem to depend mainly on the situational and social context. Recent studies in mice, rats, and squirrel monkeys suggest a modulating rather than a critical role for catechol in mechanisms regulating agonistic behavior. 12 references. (Author abstract modified)

003053 Miksic, Stephen; Sherman, Gary; Lal, Harbans. 7121 Thomas Boulevard, Pittsburgh, PA 15208 **Discriminative response control by naloxone in morphine pretreated rats.** Psychopharmacology. 72(2):179-184, 1981.

Twelve male hooded rats were trained to discriminate naloxone from saline injections in a operant procedure using a lever-press response. On certain days, according to a counterbalanced training schedule, naloxone was administered 8 hours after 40mg/kg morphine and 10 minutes prior to a trial in which food was available on a FR10 schedule from one of two levers in a dual lever operant chamber. On other days, saline was administered 10 minutes prior to a trial in which food was made available by pressing the other lever. After criterion performance for acquisition of the discrimination had been reached, the nature of the discrimination was studied. Discrimination of naloxone was dose dependent and was significantly diminished when naloxone was administered 36 hours after morphine. Partial generalization of cyclazocine with naloxone was observed. Spontaneous withdrawal from morphine, tested during trials preceded by an injection of saline instead of naloxone at various time intervals after morphine, did not generalize with the naloxone discriminative stimulus. 18 references. (Author abstract modified)

003054 Miley, William M.; Frank, Michael; Hoxter, A. Lee. Richard Stockton State College, Pomona, NJ 08240 **Rat-pup killing and maternal behavior in male Long-Evans rats: prenatal stimulation and postnatal testosterone.** Bulletin of the Psychonomic Society. 17(2):119-122, 1981.

The effects of prenatal stimulation and postnatal testosterone administration on rat pup killing and maternal behavior of male Long-Evans rats were investigated. During each of the last 5 days of pregnancy, Long-Evans rats received one of the following conditions: 45 minutes of restraint and intense illumination, 3 minutes of handling, 3 minutes of restraint and .1mg of androstenedione, and 3 minutes of restraint and .1ml sesame oil. Half of the offspring of each group received testosterone postnatally. In adulthood, the handled group's offspring killed many pups with or without exogenous testosterone; the other offspring killed many only with testosterone. More animals that received androstenedione prenatally and testosterone postnatally killed pups than animals that receive either oil or 45 minutes of restraint and intense illumination prenatally and testosterone postnatally. Subsequent studies showed that fewer prenatally unhandled animals killed than prenatally handled animals. These prenatally unhandled animals required less time to retrieve pups (and more of them did so) than did any of the other groups. 15 references. (Author abstract modified)

003055 Miller, Van; Domjan, Michael. Dept. of Psychology, University of Texas, Austin, TX 78712 **Selective sensitization induced by lithium malaise and footshock in rats.** Behavioral and Neural Biology. 31(1):42-55, 1981.

In a study of response sensitization, Sprague-Dawley rats were allowed to chose between a novel and a familiar stimulus presented contingent upon licking a drinking spout after having been exposed to an aversive stimulus. Rats pretreated with footshock showed reduced preference for a novel stimulus if shock was administered immediately before the test session, but not if shock occurred 5 or 25 minutes earlier (Experiment 1). Subjects pretreated with lithium chloride (LiCl) before a choice test between a novel saccharin solution and familiar tap water showed a reduced preference for saccharin if the LiCl was administered 35 minutes before testing, but not if the LiCl was administered 6 hours earlier (Experiment 2). However, pretreatment with LiCl did not reduce subjects' preference for a novel saccharin solution (Experiment 3). This demonstration of selective sensitization effects is contrary to characterizations of sensitization as a general, nonspecific mechanism. The results are disucssed in terms of anatomically mediated differential processing of interoceptive and exteroceptive stimuli. 25 references. (Author abstract)

003056 Mirmiran, M.; Van de Poll, N. E.; Corner, M. A.; van Oyen, H. G.; Bour, H. L. Netherlands Institute for Brain Research, IJdijk 28, 1095 KJ Amsterdam, The Netherlands **Suppression of active sleep by chronic treatment with chlorimipramine during early postnatal development: effects upon adult sleep and behavior in the rat.** Brain Research. 204(1):129-146, 1981.

To study the possible role of active sleep (physiologically equivalent to REM sleep) in brain development, male rats were injected twice daily with chlorimipramine, a potent monoamine reuptake blocker, from 1 week to 3 weeks of postnatal age. Active sleep was reduced to less than 10% of total sleep time, the level found in mature rats. In adulthood, the active sleep deprived rats showed a higher percentage of active sleep than did the control Ss, due to an increase in frequency and duration of active sleep epochs. The chlorimipramine treated rats also showed behavioral abnormalities in later life. These results demonstrate that early interference with the functioning of monoaminergic systems can have long lasting physiological and behavioral consequences. Furthermore, they are consistent with the hypothesis that AS is an important factor in normal brain development. 49 references. (Author abstract modified)

003057 Miyamoto, M.; Fukuda, N.; Narumi, S.; Nagai, Y.; Saji, Y.; Nagawa, Y. Central Research Division, Takeda Chemical Industries Ltd., Yodogawa-ku, Juso-Honmachi, Osaka 532, Japan **Gamma-butyrolactone-gamma-carbonyl-histidyl-prolinamide citrate (DN-1417): a novel TRH analog with potent effects on the central nervous system.** Life Sciences. 28(8):861-869, 1981.

A novel thyrotropin releasing hormone (TRH) analog, gamma-butyrolactone-gamma-carbonyl-histidyl-prolinamide citrate (DN-1417) with very low thyrotropin releasing activity was found to markedly increase motor activity in mice, with and without reserpine administration. DN-1417 also promoted arousal from pentobarbital or ethanol sleep and from loss of consciousness induced by concussive head injury, and reversed hypothermia induced by pentobarbital and reserpine. Circling behavior was provoked by comparatively low doses of DN-1417 in mice with unilateral striatal lesions, and the effect was prevented by pimozide and alpha-methyl-p-tyrosine. The results indicate that DN-1417 is more potent and longer acting than TRH in the CNS behavioral paradigms, and that some of the effects may be relevant to central monoaminergic systems. 30 references. (Author abstract)

003058 Mogilnicka, Ewa; Przewlocka, Barbara. Institute of Pharmacology, Polish Academy of Sciences, 31-343 Cracow, Poland **Facilitated shock-induced aggression after chronic treatment with antidepressant drugs in the rat.** Pharmacology Biochemistry and Behavior. 14(2):129-132, 1981.

The effects of four antidepressant drugs with different mechanisms of action on shock induced fighting between pairs of rats were determined. Amitriptyline, imipramine, mianserin, and iprindole, given chronically, facilitated fighting behavior. Results with the apomorphine induced aggression model point to an increased function of the noradrenergic system, evoked by a chronic treatment with antidepressants. It is unlikely that the facilitation of shock induced fighting resulted from changes in the dopamine (DA) system, since the chronically administered antidepressants did not affect apomorphine stereotypy. 19 references. (Author abstract modified)

003059 Morley, John E.; Levine, Allen S. Levine: Neuroendocrine Research Lab., V.A. Medical Center, Minneapolis, MN 55417 **Bombesin inhibits stress-induced eating.** Pharmacology Biochemistry and Behavior. 14(2):149-151, 1981.

The effects of centrally administered bombesin, a tetradecapeptide originally isolated from amphibian skin, on short-term appetite regulation were investigated in rats using the Antelman mild tail pinch paradigm. Bombesin administered both intracerebroventricularly and parenterally suppressed stress induced eating in the rat. Intraventricular administration of bombesin resulted in hyperglycemia, which was abolished by adrenalectomy. It was found that the satiety inducing effect of bombesin was independent of the hyperglycemia it produces since suppression of stress induced eating was still present in adrenalectomized animals. 25 references. (Author abstract modified)

003060 Myslobodsky, M. S.; Golovchinsky, V.; Mintz, M. Psychobiology Research Unit, Tel Aviv University, Sharett 109, Ramat Aviv, Israel **Ketamine: convulsant or anti-convulsant?** Pharmacology Biochemistry and Behavior. 14(1):27-33, 1981.

Doses of ketamine that produce narcotic/cataleptic effects (50 to 100mg/kg i.p.) reduced the intensity of picrotoxin convulsions and eliminated seizures induced by metrazol in male Sprague-Dawley rats. Subcataleptic doses of ketamine (5 to 20mg/kg) increased the duration of mitigated convulsive symptoms (abortive grand mal fits and jerks), especially those evoked by picrotoxin. Narcoleptic/cataleptic doses of ketamine considerably increased the duration of the period of single jerks and multiple jerks after picrotoxin. Picrotoxin and metrazol transformed 1 to 2Hz ketamine complexes into 2 to 4Hz wave/spike discharges alternating with periods of suppressed electrocortical activity. Grand mal EEG patterns were typically dissociated from behavioral manifestations under 50 to 100mg/kg ketamine. 22 references. (Author abstract modified)

003061 Myslobodsky, Michael S.; Braun, Hava. Psychobiology Research Unit, Dept. of Psychology, Meir Hospital, Tel-Aviv University, Tel-Aviv, Israel **Does postural asymmetry indicate directionality of rotation in rats: role of sex and handling.** Behavioural Brain Research. 2(1):113-117, 1981.

The effects of amphetamine on postural asymmetry of male and female Wistar rats was assessed during four tests: 1) tail suspension; 2) tail holding; 3) tail pinch; and 4) walking on a narrow path. The tests were conducted prior to and following ()k-amphetamine administration. Rotational directionality was assessed in a rotometer. Only in female rats did postural adjustment during the tail pinch predict the direction of circling prior to and after amphetamine. In both surgically castrated and conjugated estrogen treated male rats, and in sham castrated and handled males, the tail pinch test caused the same dominant directionality as rotation under amphetamine. The duplicity of postural tests suggests that there is a multitude of systems controlling and modulating postural response. 14 references. (Author abstract modified)

003062 Neil, A.; Terenius, L. Dept. of Pharmacology, University of Uppsala, Box 573, S-751 23 Uppsala, Sweden **d-Propoxyphene acts differently from morphine on opioid receptor-effector mechanisms.** European Journal of Pharmacology. 69(1):33-39, 1981.

The receptor binding selectivity and antinociceptive effects of d-propoxyphene and morphine were compared. In binding studies in female Sprague-Dawley rat brain synaptosomes with dihydromorphine, naloxone, and an enkephalin analogue as radioactive ligands, d-propoxyphene differed from morphine in having a higher relative affinity for sites occupied by the peptide. In the hot plate test in male NMRI mice, naloxone was more effective in antagonizing antinociception induced by morphine than that induced by d-propoxyphene. The antinociceptive potency of d-propoxyphene was not attenuated in morphine tolerant mice. Results suggest that d-propoxyphene and morphine have different receptor/effector mechanisms. 24 references. (Author abstract modified)

003063 Noll, Katherine Lenorah McManus. Northern Illinois University **A test of a neurotransmitter model of the affective disorders. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3191-B, 1981. Ann Arbor, Univ. Microfilms No. 8101454, 198p., 1980.

A model of neurotransmitter relationships in the brain systems mediating motivation, and involving serotonin (5-HT), acetylcholine (ACh), dopamine (DA), and norepinephrine (NE), was tested with Long-Evans hooded rats in a learned helplessness model of depression. Shuttle box response deficits, relative to control values, were observed in groups treated with drugs to represent several of the postulated patterns of neurotransmitter alteration in the affective disorders. The greatest increase in escape latency was observed in the group pretreated with shock and drug treated to elevate ACh function and reduce 5-HT function; this pattern was postulated to represent the Bipolar-II group of affective disorder patients, who are most likely to attempt or commit suicide. Differences in escape latency were independent of the effects of the drugs on footshock sensitivity, but footshock sensitivity was altered by manipulation of 5-HT. Serotonin altering drugs reduced brain 5-HT levels by 50% or elevated by 400%. The results support the postulated patterns of neurotransmitter alteration in the affective disorders. (Journal abstract modified)

003064 Parrott, R. F.; Baldwin, B. A. ARC Institute of Animal Physiology, Babraham, Cambridge CB2 4AT, England **Operant feeding and drinking in pigs following intracerebroventricular injection of synthetic cholecystokinin octapeptide.** Physiology & Behavior. 26(3):419-422, 1981.

Operant feeding and drinking was investigated in food deprived or water deprived pigs following intracerebroventricular (ICV) injection of a saline solution containing synthetic cholecystokinin (CCK) octapeptide. In 17 hour food deprived animals treated with 0, 5, 10, 20, or 40 units ICV, posttreatment food intake was significantly reduced in a dose related manner but drinking was unaffected. In 22 hour water deprived pigs treated with 0, 10, or 40 units CCK octapeptide ICV, no effect on drinking was apparent. Pigs injected intravenously with 40 units following 17 hours food deprivation did not reduce their food intake. 17 references. (Author abstract)

003065 Pepeu, G.; Gori, G.; Bartolini, L. Dept. of Pharmacology, Univeristy of Florence, Florence, Italy **Pharmacologic and therapeutic perspectives on dementia: an experimental approach.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 271-274).

The few experimental animal models for investigating drugs used in treating senile dementia are briefly examined. Available drugs for this purpose are to date unsatisfactory, partly because of the lack of reliable animal models on which to carry out preclinical screening. The models that are currently in use include studies of neurochemical changes in senile animals, the injection of aluminum salt solutions into the intracranial area of cats, graded hypoxia, the analysis of degeneration of the dopaminergic pathways in the CNS via electrocoagulation or intranigral injection of 6-hydroxydopamine, and the administration of anticholinergic drugs. The most useful and simple approach involves pretreatment with anticholinergic drugs and evaluation of the insuing disruption of spontaneous or learned behavior. 21 references.

003066 Perry, William; Esposito, Ralph U.; Kornetsky, Conan. Kornetsky: Lab. of Behavioral Pharmacology, L-602, Boston University School of Medicine, 80 East Concord St., Boston, MA 02118 **Effects of chronic naloxone treatment on brain-stimulation reward.** Pharmacology Biochemistry and Behavior. 14(2):247-249, 1981.

Rats were tested on a rate free psychophysical procedure to determine the absolute reinforcement thresholds for self-stimulation behavior and the effects of naloxone on reward thresholds. Administration of naloxone for 5 days failed to alter the reinforcement thresholds obtained with this procedure. To the extent that naloxone is an effective antagonist of endogenous opioids, it is concluded that central endorphin systems are not necessary to support self-stimulation behavior. 24 references. (Author abstract modified)

003067 Post, Robert M.; Squillace, Kathleen M.; Pert, Agu; Sass, Willard. Section on Psychobiology, NIMH, Bldg. 10, Rm. 3S239, 900 Rockville Pike, Bethesda, MD 20205 **The effect of amygdala kindling on spontaneous and cocaine-induced motor activity and lidocaine seizures.** Psychopharmacology. 72(2):189-196, 1981.

Interactions of amygdala kindling and drug effects were explored in two experiments. Pretreatment of rats with cocaine for 10 days did not significantly affect the rate of amygdala kindling compared to saline or nonkindled control Ss. In contrast, daily amygdala kindling with 200mcA for 20 days substantially altered subsequent behavioral responses in a long-lasting fashion. Animals showed decreased spontaneous vertical rearing activity, as well as decreased cocaine induced vertical activity. In contrast, they were more reactive to the direct dopamine receptor agonist apomorphine. Eighteen days following completion of amygdala kindling, kindled animals were more sensitive to lidocaine induced convulsions; 88% of kindled animals, but only 24% of the implanted, sham stimulated control Ss, had seizures. These data suggest that amygdala kindling may produce long-lasting changes in selected spontaneous and drug induced behaviors, as well as in convulsive thresholds. Possible physiological and neurological changes underlying this altered responsivity are discussed. 56 references. (Author abstract modified)

003068 Quock, Raymond M.; Lucas, Thomas Scott. Division of Pharmacology, Dept. of Basic Sciences, Marquette University School of Dentistry, Milwaukee, WI 53233 **Enhancement of apomorphine-induced climbing in mice by reversible and irreversible narcotic antagonist drugs.** Life Sciences. 28(12):1421-1424, 1981.

The enhancement of apomorphine induced climbing in mice by reversible and irreversible narcotic antagonist drugs is described. Apomorphine produced a characteristic climbing syndrome in mice. Pretreatment of mice with increasing doses of the reversible narcotic antagonist naloxone resulted in a dose related enhancement of this activity. Central microinjection of mice with the irreversible narcotic antagonist drug chlornaltrexamine also resulted in significant potentiation of apomorphine induced climbing for up to 14 days following pretreatment. These data indicate that narcotic antagonist drugs of both reversible and irreversible types are capable of enhancing this dopaminergic drug effect in mice. 25 references. (Author abstract modified)

003069 Reinstein, Daniel Kendig. State University of New York at Binghamton **Behavioral and biochemical changes after hippocampal damage. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2820-B, 1981. Ann Arbor, Univ. Microfilms No. 8101563, 144p., 1980.

Rats with hippocampal, cortical, or sham control lesions were observed under two conditions at 7, 14, and 28 days after surgery. Animals were observed in an open field hole poke apparatus on measures of locomotion, rearing, grooming, and exploration. Animals were then injected unilaterally with saline or 3,4-dihydroxyphenylamino-2-imidazoline (DPI) into n. accumbens and observed in a rotation apparatus on measures of rotation, rearing, and grooming. In a third experiment, dopamine (DA) receptor binding was examined at the same postoperative times. Changes in locomotion, exploration, rearing, and grooming were observed at various postoperative times and each demonstrated a unique pattern of change consistent with previous findings. Treatment with DPI tended to normalize the behavior of hippocampally lesioned animals on a number of behaviors observed in the rotation apparatus. The receptor binding data suggests that much of the change in responsiveness to DPI may be related to changes in DA receptor sensitivity or receptor populations. Results are discussed in reference to the effects of hippocampal lesion on dimensions of response initiation and maintenance. (Journal abstract modified)

003070 Rekhtman, M. B.; Samsonova, N. A.; Kryzhanovskiy, G. N. Institut obshchey patologii i patologicheskoy fiziologii, AMN SSSR, Moskva, USSR /**Electrical activity and Na, K-ATPase level in the penicillin induced epileptogenic focus of the rat brain cortex, and the effect of diazepam./** Elektricheskaya aktivnost' i uroven' Na, K-ATFazy v epilepticheskom ochage, obrazovannom deystviyem penitsillina na kory gplovnogo mozga krys, i vliyaniye na nikh diazepama. Neyrofiziologiya. 12(4):349-357, 1980.

Electrical activity and Na, K-ATPase level in the penicillin induced epileptogenic focus of the rat cerebral cortex, and the effect of diazepam were studied in 70 white male rats. Silver ball electrodes were placed 0.5mm from the cortex. Penicillin application to the brain motor cortex resulted in the appearance of interictal discharges and seizures. Following the intramuscular injection of diazepam (2mg/kg) there was a 100% increase in the Na, K-ATPase activity of neuronal membranes in the epileptogenic focus. Interictal discharges and seizures changed in different ways after injection of diazepam. Results suggest that the differential effects of diazepam on seizures and interictal discharges may reflect different mechanisms of action with respect to electrical activity and Na, K-ATPase level. 37 references. (Journal abstract modified)

003071 Rick, J. T.; Gregson, A. N.; Leibowitz, S.; Adinolfi, M. Adinolfi: Pediatric Research Unit, Guy's Hospital Medical School, London SE1 9RT, England **Behavioural changes in adult rats following administration of antibodies against brain gangliosides.** Developmental Medicine and Child Neurology. 22(6):719-724, 1980.

Mature rats, previously trained in a standard two lever chamber, were injected with antibodies against gangliosides and the effect was evaluated in a series of different behavioral tests.

Compared with control Ss, the injected rats showed transient differences in their response to stimuli. The apparent counterintuitive superiority of the treated animals over the control Ss is discussed with reference to other experimental studies of young rats and to discrete pathological human conditions associated with the presence of brain antibodies. 19 references. (Author abstract)

003072 Ridley, R. M.; Haystead, T. A. J.; Baker, H. F. Division of Psychiatry, Clinical Research Centre, Watford Road, Harrow, Middlesex, England **An involvement of dopamine in higher order choice mechanisms in the monkey.** Psychopharmacology. 72(2):173-177, 1981.

The involvement of dopamine in higher order choice mechanisms in the monkey was investigated. Low doses of amphetamine were found to induce choice perseveration in an object discrimination task under conditions where such perseveration either increases or decreases the number of rewards obtained as compared to chance performance. Neither stereotyped motor actions nor repetitive choice of position contributed to this effect, which could be blocked by pretreatment with the neuroleptic haloperidol. These results demonstrate that higher order choice mechanisms may involve dopamine systems in the primate. 23 references. (Author abstract modified)

003073 Rodgers, R. J.; Deacon, R. M. J. Postgraduate School of Psychology, University of Bradford, Bradford, England **Footshock-analgesia: prevention by behavioural manipulation but not by naloxone.** Physiology & Behavior. 26(2):183-187, 1981.

The effects of naloxone and behavioral manipulation on footshock analgesia were investigated in male Sprague-Dawley rats. Acute exposure to footshock significantly elevated tail flick latencies in single rats, but none in paired animals, which fought in response to shock. Naloxone hydrochloride (5mg/kg) failed to prevent the shock induced increases in latencies in unpaired animals. Results suggest that naloxone sensitive opiate receptors are not involved in footshock analgesia. 34 references. (Author abstract modified)

003074 Rodriguez-Sierra, Jorge F.; Terasawa, Ei; Goldfoot, David A.; DeWied, David. Terasawa: Wisconsin Regional Primate Research Center, University of Wisconsin, Madison, WI 53706 **Testosterone potentiation of the effectiveness of ACTH1-24 on the induction of the stretch-yawning syndrome (SYS) in male guinea pigs.** Hormones and Behavior. 15(1):77-85, 1981.

Similarities and differences of response of the guinea-pig to intracranial ACTH was examined and compared to those reported for other species. Ventricular administration of ACTH1-24 stimulated stretch/yawning in a dose related manner. Daily subcutaneous treatment with testosterone propionate (TP) facilitated the effects of ACTH1-24 on this response. TP given without ACTH1-24 stimulated yawning but did not stimulate stretching or combined stretch/yawning. Unlike most other species, guinea-pigs did not display autogrooming, scratching, or wet dog shaking in response to intracranial ACTH1-24. The results suggest that testosterone may alter the sensitivity of neural mechanisms which are responsive to ACTH1-24. 122 references. (Author abstract modified)

003075 Rotiroti, D.; Naccari, F.; Ammendola, D.; De Gori, N.; Nistico, G. O. Institute of Pharmacology, Faculty of Medicine, University of Messina, Messina, Italy **Central effects of substance P in fowls.** Research Communications in Psychology, Psychiatry and Behavior. 5(4):397-406, 1980.

In adult fowls (Gallus domesticus) with cannulae chronically implanted by means of a stereotactic instrument into the cerebral ventricle or into selected areas of the brain, the effects of undecapeptide substance P(SP) given by these routes on behavior, electrocortical activity and body temperature were studied. SP infused into the cerebral ventricles produced an intense pattern of stereotyped movements lasting about 60 minutes, accompanied mostly by slow-wave sleep except after the highest doses used when an initial period of behavioral alertness and vocalization was observed. Body temperature increased only after the largest doses. Microinjection of SP into the n. mesencephalicus profundus (homologous to the mammalian s. nigra) also produced stereotyped movements which were superimposed on a tonic head/neck contralateral deviation. A similar pattern occurred after infusion into the hypothalamus. Pretreatment with haloperidol prevented stereotyped behavior elicited by SP infusion into the ventricles or into the n. mesencephalicus profundus, suggesting that such stereotyped movements are mediated through activation of dopaminergic mechanisms. 24 references. (Author abstract modified)

003076 Rudeen, P. Kevin; Symmes, Sandra K. Dept. of Anatomy, Bowman Gray School of Medicine, Winston-Salem, NC 27103 **Pineal gland and melatonin influence on chronic alcohol consumption by hamsters.** Pharmacology Biochemistry and Behavior. 14(2):143-147, 1981.

Pineal gland and melatonin influences on chronic alcohol consumption by hamsters were investigated. Melatonin, a pineal hormone, was administered either daily for 11 weeks as a subcutaneous injection or weekly as a subcutaneous beeswax implant for 5 weeks to hamsters allowed a free choice between water or a 10% ethanol solution. Food, water, and alcohol consumptions were measured on a daily basis. Animals treated by daily injection with melatonin consumed slightly less ethanol than animals not given melatonin. In light deprived animals given chronic implants of melatonin, alcohol consumption was reduced when compared to alcohol consumption by light deprived hamsters not receiving melatonin. Melatonin treatment also resulted in reducing daily total fluid intake as well as ethanol consumption in light deprived hamsters. The results indicate that the pineal gland may influence fluid consumption in the hamster, and indirectly alters the propensity of the hamster to consume alcohol. 15 references. (Author abstract modified)

003077 Sachs, Benjamin D.; Valcourt, Richard J.; Flagg, Henry C. Dept. of Psychology, U-20, University of Connecticut, Storrs, CT 06268 **Copulatory behavior and sexual reflexes of male rats treated with naloxone.** Pharmacology Biochemistry and Behavior. 14(2):251-253, 1981.

The effects of naloxone on copulatory behavior and sexual reflexes of male rats were investigated and a potential role for endogenous opiates in the regulation of sexual behavior of male rats was explored. Animals were injected with 15 to 45mg/kg naloxone hydrochloride 30 minutes prior to the start of reflex testing, and with 7.5 to 45mg/kg naloxone hydrochloride 30 minutes before testing for copulation. Naloxone resulted in a small but reliable decrease in the number of penile flips. Reflex latency and other measures of penile reflexes were unaffected. At all doses used, naloxone significantly prolonged the postejaculatory refractory period, with no other effects on copulation. 29 references. (Author abstract modified)

003078 Salles, K. S. S.; Colasanti, B. K.; Craig, C. R. Dept. of Pharmacology, West Virginia University Medical Center, Morgantown, WV 26506 **Cyclic AMP-induced changes in the electroencephalogram and in behavior during morphine dependence and abstinence in the rat.** Sleep. 1:247-257, 1979.

Rats were prepared with permanent electrodes for recording activities of the electroencephalogram (EEG) and electromyogram (EMG) and were made morphine dependent by subcuta-

neous implantation. Abstinence was precipitated by removal of morphine pellets 72 hours later. During the first 2 days after pellet implantation, high voltage slow activity appeared in the EEG during behavioral wakefulness and stupor, while sleep and REM sleep were reduced greatly. By the third day, tolerance to these effects developed. After pellet removal, REM sleep time during the first day was reduced. Wet dog shake activity reached a maximum during the second day of abstinence. Treatment of a second group of rats with cyclic adenosine 3',5'-monophosphate (cAMP), 50mg/kg intraperitoneally once daily prior to and during induction of morphine dependence and during withdrawal, markedly reduced the appearance of morphine induced high voltage EEG slow activity after implantation of pellets. Behavioral arousal during the first 2 days after pellet implantation, on the other hand, was increased. After removal of pellets, from the cAMP treated rats sleep episodes occurred less frequently during the first day than in the control data. The incidence of wet shakes at this time was elevated. These results provide direct evidence for the involvement of brain cAMP in the medation of the central effects of morphine. (Journal abstract modified)

003079 Sanderson, C. A.; Rogers, L. J. Pharmacology Dept., Monash University, Clayton, 3168, Victoria, Australia **2,4,5-Trichlorophenoxyacetic acid causes behavioral effects in chickens at environmentally relevant doses.** Science. 211(4482):593-595, 1981.

Administration of the herbicide 2,4,5-trichlorophenoxyacetic acid to incubating chicken eggs altered behavior after hatching. Single doses, with no morphological effects, retarded learning (lowest dose, 7 milligrams per kilogram of bodyweight) and increased general activity (27 milligrams per kilogram) and jumping (13 milligrams per kilogram). Day 15 of incubation was the most susceptible stage of development. 10 references. (Author abstract)

003080 Sanger, D. J.; McCarthy, P. S.; Metcalf, G. Dept. of Pharmacology, Pharmaceutical Division, Reckitt and Colman, Dansom Lane, Hull HU8 7DS, England **The effects of opiate antagonists on food intake are stereospecific.** Neuropharmacology. 20(1):45-47, 1981.

The effects of the opiate antagonists naloxone,. Mr1452/3 and Mr2266/7 on food intake of food deprived rats were investigated. A wide range of doses of naloxone was found to reduce food intake of food deprived rats, and this effect was found to have a relatively short duration of action. Similar reductions in eating were found with two benzomorphan compounds (Mr1452 and Mr2266) known to act as opiate antagonists. However, the () isomers of these compounds (Mr1453 and Mr2267), which are not potent opiate antagonists, did not reduce food intake. It is concluded that food intake is reduced by the blockade of opiate receptors. 17 references. (Author abstract modified)

003081 Saranak, Jureepan; Goldfarb, Joseph. Dept. of Pharmacology, Mount Sinai School of Medicine, City University of New York, New York, NY 10029 **Effects of electrolytic and 6-hydroxydopamine lesions of the lateral hypothalamus on rotation evoked by electrical stimulation of the substantia nigra in rats.** Brain Research. 208(1):81-96, 1981.

Contralateral rotation evoked by electrical stimulation of the left substantia nigra was studied in rats before and after electrolytic or 6-hydroxydopamine (6-OHDA) lesions of the lateral hypothalamus. Electrolytic lesions, which produced mean ipsilateral striatal dopamine depletion of 58%, significantly reduced the rotation at 2 hours to 14 days postlesion. 6-OHDA lesions, which produced mean ipsilateral striatal dopamine depletion of 93%, significantly increased the rotation at 3 to 14 days postlesion. Haloperidol administration partially reduced rotation in both control and lesioned rats in a dose related manner. It is suggested that contralateral rotation evoked by electrical stimulation of the substantia nigra may reflect direct activation of neurons postsynaptic to the dopaminergic nigrostriatal neurons. 79 references. (Author abstract modified)

003082 Satinder, K. Paul. Dept. of Psychology, Lakehead University, Thunder Bay, Ontario, Canada P7B 5E1 **Interaction among d-amphetamine, scopolamine and genotype in avoidance behavior of rats.** Pharmacology Biochemistry and Behavior. 14(1):121-124, 1981.

The effects of d-amphetamine and scopolamine on avoidance behavior were determined in RHA/Lu and RLA/Lu rats. In a task in which the animal could respond in either of two directions, differences between the two lines were seen after scopolamine but not after d-amphetamine. Scopolamine was more likely than amphetamine to disrupt responsiveness to visual stimuli in the low avoidance line and this difference is influenced by bidirectional genetic selection. 8 references. (Author abstract modified)

003083 Satoh, Masamichi; Akaike, Akinori; Nakazawa, Takahiro; Takagi, Hiroshi. Dept. of Pharmacology, Faculty of Pharmaceutical Sciences, Kyoto University, Sakyo-ku, Kyoto 606, Japan **Evidence for involvement of separate mechanisms in the production of analgesia by electrical stimulation of the nucleus reticularis paragigantocellularis and nucleus raphe magnus in the rat.** Brain Research. 194(2):525-529, 1980.

The effects of serotonergic, noradrenergic, and opiate receptor antagonists on stimulation produced analgesia (SPA) elicited from the nucleus raphe magnus (NRM) or nucleus reticularis paragigantocellularis (NRPG) were studied in male Sprague-Dawley rats. SPA elicited from the NRPG was antagonized by phenoxybenzamine (2mg/kg) and naloxone (1mg/kg), but not by methysergide (2mg/kg). SPA elicited from the NRM was inhibited by methysergide, but not by the other two drugs. Results suggest that NRM/SPA may be mediated by the serotonergic system, whereas descending noradrenergic and enkephalinergic systems may be involved in NRPG/SPA. 20 references.

003084 Savageau, Michelle M.; Beatty, William W. Beatty: Dept. of Psychology, North Dakota State University, Fargo, ND 58105 **Gonadectomy and sex differences in the behavioral responses to amphetamine and apomorphine of rats.** Pharmacology Biochemistry and Behavior. 14(1):17-21, 1981.

Apomorphine hydrochloride (2mg/kg) and d-amphetamine (5mg/kg) induced more intense and longer lasting stereotyped behavior in female rats than in male rats. Gonadectomy did not alter the drug induced stereotypy in either sex. A 1mg/kg dose of amphetamine caused greater stimulation of activity in females than in males. Castration had no effect on male drug responses, but ovariectomy blocked the stimulating effect of amphetamine on activity. Low doses of apomorphine depressed activity, and this effect was more pronounced in ovariectomized females than in the other groups. 29 references. (Author abstract modified)

003085 Scarnati, E.; Forchetti, C.; Ruggieri, S.; Agnoli, A. Dept. of Neurology, School of Medicine, University L'Aquila, I-67100 L'Aquila, Italy **Dopamine and dementia. An animal model with destruction of the mesocortical dopaminergic pathway: a preliminary study.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 139-145).

An automatized psychomotor evaluation of the cerebral catecholaminergic system, in particular the dopaminergic masocortical pathway, was conducted to study the possible modification

of behavioral patterns in basal conditions and during neuropharmacological treatment of Alzheimer type dementia using dopamine (DA) agonists and antagonists. The results indicate that the bilateral lesion of the DA ventral tegmental area (group A10) significantly reduced motor behavior in rats and that this impairment may be improved with the use of DA agonists and only in part by drugs releasing DA. If an ongoing study of learning confirms the presence of disturbances in avoidance behavior and if the disturbances can be corrected pharmacologically, the animal model with bilateral lesions of the A10 group will be a valid tool in studying psychomotor disturbances appearing in syndromes with involvement of the DA mesocortical system. 23 references.

003086 Schaefer, Gerald J.; Holtzman, Stephen G. Holtzman: Dept. of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322 **Morphine-like stimulus effects in the monkey: opioids with antagonist properties.** Pharmacology Biochemistry and Behavior. 14(2):241-245, 1981.

The discriminative stimulus properties of opioids with a wide spectrum of agonist and antagonist properties were evaluated in squirrel monkeys trained to discriminate between morphine and saline in a two choice discrete trial avoidance task. Stimulus control was considered to be established when the monkeys reliably completed at least 22 trials of a 25 trial session on the lever appropriate for the drug state. Tests of stimulus generalization were conducted with compounds that were previously shown to produce discriminative stimulus effects that are morphine like, cyclazocine like, or neither morphine like nor cyclazocine like. Results confirm the heterogeneous nature of the discriminative stimulus effects of opioids with mixed agonist and antagonist properties and indicate the importance of interspecies comparisons. 17 references. (Author abstract modified)

003087 Schechter, Martin D. Dept. of Pharmacology, Northeastern Ohio Universities College of Medicine, Rootstown, OH 44272 **Extended schedule transfer of ethanol discrimination.** Pharmacology Biochemistry and Behavior. 14(1):23-25, 1981.

The persistence of generalization to pentobarbital after ethanol discrimination training was studied in male Sprague-Dawley rats. Stimulus control was established with ethanol (600mg/kg) and saline in a two lever choice task and a fixed-ratio 10 schedule (Ss trained to emit a series of 10 responses on one lever) of food reinforcement. Animals were then tested with an extended schedule procedure in which lever selection and its perseverance were measured under training conditions and after pentobarbital (2 to 12mg/kg). Drug lever selection declined with decreasing doses of pentobarbital. At 4mg/kg, initial lever selection was evenly distributed between the two levers. 15 references. (Author abstract modified)

003088 Schulz, Rudiger; Wuster, Michael; Herz, Albert. Dept. of Neuropharmacology, Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 2, D-8000 Munich 40, West Germany **Differentiation of opiate receptors in the brain by the selective development of tolerance.** Pharmacology Biochemistry and Behavior. 14(1):75-79, 1981.

The development of tolerance to the delta-opiate receptor agonist D-Ala2,D-Leu5-enkephalin (DADL) or the mu-agonist sufentanyl (SUF) was studied in male Sprague-Dawley rats. In tests for catatonia, chronic intracerebroventricular infusions of DADL for 7 days produced a 15-fold tolerance with no cross-tolerance to SUF. Rats treated chronically with SUF developed tolerances to the effects of SUF on analgesia and catatonia. These animals showed no cross-tolerance to the effects of DADL on catatonia, but did show tolerance to DADL analgesia. Results suggest that prolonged stimulation of specific opiate receptors in the brain by selective agonists may bring about selective tolerance for specific receptors. These data conflict with the notion that mu-receptors specifically mediate analgesia and delta-receptors mediate catatonia. 28 references. (Author abstract modified)

003089 Scotto di Tella, A. M.; Dessaigne, S.; Mercier, J. Lab. de Pharmacodynamie, Faculte de Pharmacie, 27, bd. Jean-Moulin, F-13385 Marseille Cedex 4, France /**Can the antidepressive properties of lithium be determined experimentally?**/ Peut-on determiner experimentalement les proprietes antidepressives du lithium? Encephale. 6(2):115-129, 1980.

The antidepressant properties of lithium were studied. A sample of Swiss albino rats was divided into lots of ten each and was administered one of two types of lithium injection: a single injection of 2 or 4mEq/kg; or daily injection of the same dose over a period of 14 days. A control group was injected with sodium chloride in the same doses. The rats were administered three tests: two classic tests of antidepressants and the Porsolt test for despair; the anxiolytic effect also was studied. Results indicate that lithium did not demonstrate antiserpine, anticataleptic or central anticholinergic properties, but was able to antagonize despair behavior as measured by the Porsolt test. This effect was observed with lithium blood levels which revealed a clinically antidepressant action. 48 references. (Journal abstract modified)

003090 Seaman, Stephen Frederic. University of Pennsylvania **Dose size and interdose interval effects on morphine tolerance in the rat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2808-B, 1981. Ann Arbor, Univ. Microfilms No. 8028888, 101p., 1980.

Factors which might affect morphine tolerance growth in the rat, dose size and interdose interval, were studied. As predicted larger doses of morphine resulted in more tolerance (less analgesia following the test doses). Likewise shorter interdose intervals resulted in more tolerance. Furthermore a multiple regression analysis suggested that the relationship between interdose interval and tolerance is linear. A number of different measures of analgesia were compared. Results indicate that the analgesic index (which corrects for both predrug latency and maximum allowable latency) yielded the most orderly results in the regression analysis, suggesting that it is a better measure of analgesia than latency, log latency, or latency area. (Journal abstract modified)

003091 Sheard, Michael H. Yale University School of Medicine, Connecticut Mental Health Center, 34 Park Street, New Haven, CT 06508 **Shock-induced fighting (SIF): psychopharmacological studies.** Aggressive Behavior. 7(1):41-49, 1981.

Shock induced fighting in rats is briefly reviewed and the role of catecholamine serotonin and cholinergic neuromodulation is discussed in terms of specific agonists or antagonists to each system. In studying the action on shock induced fighting, it is important to take into account: 1) differential effects on presynaptic autoreceptors and postsynaptic receptors; 2) differential effects upon forebrain versus brainstem and spinal mechanisms; and 3) the interaction between the various neuromodulating systems. These systems are a model of tightly controlled balanced regulation. This might help explain the frequent biphasic action of many drugs, as well as their frequent ineffectiveness in changing this behavior. It is also noted that the stress of the shock procedure, the stress of the fighting, and the fighting itself produce changes in the neuromodulators. These changes may synergize with or counteract the changes brought about by the drug administration itself and determine the resultant pattern

which most closely correlates with the behavioral change. 41 references. (Author abstract modified)

003092 Shearman, Gary Terence. University of Rhode Island **The anxiomimetic properties of pentylenetetrazol in the rat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):2998-B, 1981. Ann Arbor, Univ. Microfilms No. 8102536, 173p., 1980.

The hypothesis that the discriminative stimulus produced by pentylenetetrazol (PTZ) in the rat is related to its anxiogenic action in man was examined. It was also an objective to suggest the neurochemical basis for the discriminative stimulus property of PTZ through appropriate drug interactions. In an operant procedure of lever pressing, male hooded rats were trained to respond with a lever on one side of a food cup 15 minutes following a PTZ injection and to respond with a level on the alternate side following a saline injection. The anxiogenic stimulants cocaine, R05-3663, and strychnine generalized to the PTZ discriminative stimulus. The discriminative stimulus produced by PTZ was not antagonized by an anticonvulsant or other central nervous system depressants that are not anxiolytics. There was a correlation between the potency of drugs effective in antagonizing the PTZ discriminative stimulus and their effective doses in a conflict test of anxiety as well as their clinically effective doses. Generalization to the PTZ discriminative stimulus by GABA antagonists and antagonism by GABA agonists but lack of generalization to or antagonism by drugs affecting other neurotransmitter systems suggest that the PTZ discriminative stimulus might be mediated through decreased GABA neuronal activity. (Journal abstract modified)

003093 Shimizu, Takao; Koja, Takeshi; Fujisaki, Tadashi; Fukuda, Takeo. Dept. of Pharmacology, Faculty of Medicine, Kagoshima University, Kagoshima 890, Japan **Effects of methysergide and naloxone on analgesia induced by the peripheral electric stimulation in mice.** Brain Research. 208(2):463-467, 1981.

The antinociceptive effects produced by peripheral electric stimulation (PES) in mice were examined; and the influence of administration of L-5-hydroxytryptophan (5-HTP), methysergide, and naloxone on the antinociceptive effects of the PES was investigated. Administration of 5-HTP enhanced antinociceptive effects induced by PES, while methysergide and naloxone abolished this antinociception. The mechanisms of analgesia produced by PES involve both endogenous opiate systems and central serotonergic mechanisms. There is not yet sufficient evidence to determine whether the central 5-HT system or the endogenous opioid plays a more important role in producing analgesias by PES, or how the systems are interrelated. 15 references. (Author abstract modified)

003094 Sloviter, Robert S.; Damiano, Bruce P.; Connor, John D. Dept. of Pharmacology, Milton S. Hershey Medical Center, Pennsylvania State University College of Medicine, Hershey, PA 17033 **Relative potency of amphetamine isomers in causing the serotonin behavioral syndrome in rats.** Biological Psychiatry. 15(5):789-796, 1980.

The relative potency of amphetamine isomers in causing the serotonin behavioral syndrome in rat was investigated. Experiments on the mechanisms by which amphetamine evokes this behavioral syndrome reveal that the l-isomer, like the d-isomer, acts indirectly, i.e., by release of endogenous serotonin. Futhermore, when d-isomer and l-isomer are compared on the basis of potency in causing the serotonin behavioral syndrome, the d-isomer is between two and three times more potent than the l-isomer. This result is consistent with the greater potency of the d-isomer (approximately two to one) in exacerbating symptoms of paranoid psychosis in humans. The data indicate that the serotonin behavioral syndrome in rats caused by relatively high doses of amphetamine may be the experimental counterpart of the paranoid psychosis induced in man by high doses of amphetamine. 24 references. (Author abstract modified)

003095 Smith, Robert C.; Biggs, Charles; Vroulis, George; Brinkman, Samuel. Section of Biological Psychiatry, Texas Research Institute of Mental Sciences, 1300 Moursund, Texas Medical Center, Houston, TX 77030 **Effects of chronic administration of phencyclidine on stereotyped and ataxic behaviors in the rat.** Life Sciences. 28(10):1163-1174, 1981.

The effects of chronic administration of phencyclidine (PCP) on stereotyped and ataxic behaviors in the rat were investigated. After chronic administration of PCP, a high test dose (15mg/kg) of PCP produced increases in stereotypic and ataxic behaviors, and a lower test dose of PCP produced decreases in these behaviors, compared to behavioral responses of control rats. Rearing behavior in rats chronically administered PCP was increased at all test doses of the drug. Rats treated chronically with 15mg/kg PCP for 9 days showed marked increases in most of these behaviors, whereas, rats receiving 5mg/kg PCP for 9 days showed less change in several stereotypic and ataxic behaviors. Results suggest that chronic administration of PCP augments sensitivity to the sterotypic inducing effects of high doses, and decreases sensitivity to low doses of PCP. 34 references. (Author abstract modified)

003096 Spealman, Roger D.; Kelleher, Roger T.; Morse, William H.; Goldberg, Steven R. Harvard Medical School, New England Regional Primate Research Center, Southborough, MA **Supersensitivity to the behavioral effects of opiate antagonists.** Psychopharmacology Bulletin. 17(1):54-56, 1981.

Supersensitivity to the behavioral effects of opiate antagonists was examined in monkeys by determining dose effect curves for naloxone and naltrexone before and after an intervening period of chronic administration. Results from two experiments indicate that before chronic administration naloxone or naltrexone had little or no effect on responding, but after chronic administration, the cumulative dose effect curves were shifted to the left. Thus chronic administration of the specific opiate antagonists, naloxone and naltrexone, produced marked supersensitivity to their behavioral effects in squirrel and rhesus monkeys. These findings suggest that supersensitivity to the behavioral effets of opiate antagonists reflects a functional alteration of the endorphin system as a result of chronic receptor blockade. 8 references. (Author abstract modified)

003097 Steinfels, George Francis. University of Maryland Baltimore Professional Schools **Relapse to narcotic self-administration in morphine post-addict rats: a possible model for predicting abuse liability of narcotic drugs. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):2998-B, 1981. Ann Arbor, Univ. Microfilms No. 8102526, 71p., 1980.

The tendencies of rats with a previous history of narcotic addiction to relapse to narcotic drug self-administration were examined. Adult female Sprague Dawley rats were prepared with chronic EEG and EMG electrodes and intravenous cannulae. Rats were made physically dependent on morphine and then trained to lever press to receive morphine injections. After a period of withdrawal, rats who had initially received morphine, methadone, and levo-alpha-acetylmethadol (LAAM) relapsed to self-administration of morphine. A second study assessed the tendencies of morphine postaddict rats to relapse to self-administration of cyclazocine, pentazocine, nalbuphine, and butorphanol. Results suggest that there was considerable physical dependence in rats dependent on morphine and pentazocine, but relatively less physical dependence on cyclazocine, nalbuphine,

and butorphanol. Data also seem to differentiate between drugs which induce both psychological and physical dependence such as morphine and pentazocine, and drugs which produce a similar psychological and apparently less physical dependence such as cyclazocine, nalbuphine, and butorphanol. (Journal abstract modified)

003098 Stevens, Robin; Goldstein, Ralph. Dept. of Psychology, Nottingham University, Nottingham, NG7 2RD England **Effects of neonatal testosterone and estrogen on open-field behaviour in rats.** Physiology & Behavior. 26(3):551-553, 1981.

The effects of neonatal testosterone and estrogen on open-field behavior in rats were investigated. On day 1 and 4 after birth, male an female rats from the same litter were injected with either testosterone propionate (TP), or estradiol benzoate (EB) or oil. Ss were tested in the open-field for 2 minutes per day, for 4 successive days at 45 and 85 days of age. Adult females were significantly more active than males in the outer and inner fields, reared more and defecated less. Neonatal TP and EB treatments reduced activity in females, but only EB increased defecation in females. EB and TP treated females were heavier than controls at 125 days of age but nonsignificantly so in the case of TP. Gonadal weights in males and females were reduced in EB and TP treatment, as were penile diameter, number of penile papillae, and anogenital spacing in EB treated males. Some of these results are consistent with the argument that androgens defeminize or masculinize certain neural mechanisms in the neonate after first being converted to estrogens, but both EB and TP have anomalous effects on males in producing morphological demasculinization. 7 references. (Author abstract modified)

003099 Takahashi, Hakuo; Bunag, Ruben D. Bunag: Dept. of Pharmacology, University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City, KS 66103 **Centrally induced cardiovascular and sympathetic nerve responses to bradykinin in rats.** Journal of Pharmacology and Experimental Therapeutics. 216(1):192-197, 1981.

Central actions of bradykinin were studied by recording blood pressure and sympathetic nerve activity from the body of a recipient rat whose head was vascularly isolated and perfused by a donor rat. Intracarotid injections of bradykinin had biphasic effects consisting of initial inhibition followed by more prolonged stimulation. Initial vasodepression and sympathetic inhibition disappeared after intracerebroventricular injection of 6-hydroxydopamine. On the other hand, the secondary pressor response and its attendant sympathetic hyperactivity were reduced after inhibition of prostaglandin synthesis with indomethacin, and conversely, augmented after administration of the prostaglandin precursor, arachidonic acid. Pressor responses elicited by intracerebroventricular injection of bradykinin in awake rats were also inhibited by indomethacin. These results indicate that bradykinin has at least two centrally induced actions on blood pressure: an initial vasodepression caused by release of endogenous norepinephrine which activates alpha-adrenergic vasodepressor mechanisms in supramedullary centers, and a secondary pressor effect that may be mediated via release of endogenous prostaglandins. 27 references. (Author abstract)

003100 Talalayenko, A. N.; Krivobok, G. K.; Boreysha, I. K. Kafedra farmakologii Donetskogo meditsinskogo instituta im. M. Gor'kogo, Donetsk, USSR /**The pharmacological analysis of monoaminergic mechanisms of the medial hypothalamus in food procuring conditioned reflexes in rats.**/ Farmakologicheskiy analiz monoaminergicheskikh mekhanizmov medial'nogo gipotalamusa v pishchedobyvatel'nykh uslovnykh refleksakh u krys. Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova. 30(6):1204-1210, 1980.

Monoaminergic mechanisms of the medial hypothalamus in food procuring conditioned reflexes were studied in 16 male rats using pharmacological analysis. Results show that microinjection of noradrenaline and dopamine in the medial hypothalamus impedes the realization of the food procuring conditioned reflex, prolonging the reflex latency, lowering its value and the number of conditioned food procuring movements. The effects of catecholamines on food procuring conditioned activity are specific and are brought about through alpha-adrenoreceptors or receptors of the hypothalamic neurons sensitive to haloperidol and aminazine. Local administration of GABA to the hypothalamus prolongs the latency of the food procuring conditioned reflex, but does not change its value and the number of conditioned food procuring movements. The effect of GABA is not due to the effect on adrenoreceptors and dopamine receptors of the hypothalamus. 19 references. (Journal abstract modified)

003101 Tellez-Villagra, C.; Vazquez, F.; De la Mora, P.; Brust-Carmona, H. Brust-Carmona: Departamento de Fisiologia, Facultad de Medicina, A.P. 70250 Cd. Universitaria, Mexico 20, D. F. Mexico **Modification of motor activity, passive avoidance conditioning and evoked potentials by microinjections of strychnine in both caudate nuclei in cats.** Pharmacology Biochemistry and Behavior. 14(2):193-199, 1981.

Modification of motor activity, passive avoidance conditioning, and evoked potentials by microinjections of strychnine in both caudate nuclei in cats is described. Bilateral microinjection of 100mcg strychnine produced a stereotyped behavior of grooming and running with the extremities flexed to dark places. When placed in a two compartment chamber for passive avoidance conditioning, the cats would not move from the dark compartment to the illuminated one. After decreasing the illumination, some cats crossed to the illuminated compartment and the acquisition test was performed. Retention of the learned response was not impaired. Strychnine affected the evoked potentials recorded in caudate nucleus by nucleus centralis medialis stimulation by increasing the late positive component. In the lateral geniculate body, strychnine affected a late positive wave and in the occipital cortex it increased the initial negative peaks and decreased the late positive ones of the potentials evoked by flash stimulation. These findings suggest a more subtle role for the caudate nucleus in the regulation of visual information which is probably related to attention processes. 24 references. (Author abstract modified)

003102 Thorn, Beverly E. Southern Illinois University at Carbondale **A neuroanatomical study of analgesia and catatonia induced by etorphine in the rat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3227-B, 1981. Ann Arbor, Univ. Microfilms No. 8102432, 79p., 1980.

The neuroanatomical substrates for etorphine hydrochloride analgesia and catatonia were investigated. Rats were injected with 1mcg etorphine in one of 11 different neuroanatomical sites: periaqueductal grey, midbrain reticular formation, cerebral aqueduct, cerebellum, basolateral amygdala, corticomedial amygdala, nucleus accumbens, caudate putamen, globus pallidus, medial thalamus or hippocampus. The Flinch jump technique was used to assess pain sensitivity and the bar test was used to study catatonia. Analgesia was never elicited without catatonia, but catatonia was elicited without analgesia, suggesting possible separation of the neuroanatomical substrate for these two opiate actions. Results show that injections of etorphine result in at least some degree of neuroanatomical specificity. (Journal abstract modified)

003103 Tompkins, E. C.; Clemento, A. J.; Taylor, Duncan P.; Perhach, J. L., Jr. Taylor: Dept. of Biologic Research, Mead Johnson Pharmaceutical Division, Evansville, IN 47721 **Inhibition of aggressive behavior in rhesus monkeys by buspirone.** Research Communications in Psychology, Psychiatry and Behavior. 5(4):337-352, 1980.

The effect of administration of buspirone or diazepam on the aggressive behavior of rhesus monkeys was investigated by measuring the response to prodding with a pole. Buspirone and diazepam exhibited antiaggressive properties in a dose dependent fashion from 20mg/kg to 160mg/kg for buspirone and at 5mg/kg and 20mk/kg for diazepam. Treatment with buspirone led to hypoactivity only at high doses, whereas all doses of diazepam which inhibited aggression elicited side-effects of both hypoactivity and ataxia. The results have implications for the use of buspirone, a new agent chemically unrelated to any existing antianxiety agent, in the treatment of psychoneurotic patients with a primary diagnosis of anxiety neurosis. 6 references. (Author abstract modified)

003104 Tulunay, F. C.; Ayhan, I. H.; Portoghese, P. S.; Takemori, A. E. Takemori: Dept. of Pharmacology, University of Minnesota, 3-260 Millard Hall, 435 Delaware St. S.E., Minneapolis, MN 55455 **Antagonism by chlornaltrexamine of some effects of delta9-tetrahydrocannabinol in rats.** European Journal of Pharmacology. 70(2):219-224, 1981.

The analgesia, hypothermia, hypothermic tolerance, and physical dependence produced by delta9-tetrahydrocannabinol (THC) in male albino rats were inhibited by chlornaltrexamine, a selective, long-acting, irreversible opiate antagonist. Results suggest that cannabis and opiates have some common features and that some actions of THC may be mediated by central opiod mechanisms. 22 references. (Author abstract modified)

003105 Valentine, Joseph O.; Barrett, James E. Dept. of Psychology, University of Maryland, College Park, MD 20742 **Effects of chlordiazepoxide and d-amphetamine on responding suppressed by conditioned punishment.** Journal of the Experimental Analysis of Behavior. 35(2):209-216, 1981.

Keypecking by two pigeons maintained under a variable-interval 2 min schedule of food presentation was suppressed when each response produced a 5 sec visual stimulus that was occasionally paired with shock. Stimulus-shock pairings occurred independently of responding according to a variable-time 6 min schedule for one bird or once per session for the other bird. The effects of chlordiazepoxide and d-amphetamine were assessed on this baseline of behavior suppressed by conditioned punishment. Chlordiazepoxide produced dose related increases in the rate of punished responding, whereas d-amphetamine produced only decreases. In addition, chlordiazepoxide produced dose related increases in response rate during the response produced and response independent stimulus presentations; d-amphetamine, however, only decreased responding during stimulus presentations. 16 references. (Author abstract)

003106 Valentino, Rita J.; Herling, Seymore; Woods, James H. Dept. of Pharmacology, University of Michigan, Ann Arbor, MI 48104 **The relationship between the acute behavioral effects of narcotic antagonists and the narcotic-dependent state.** Psychopharmacology Bulletin. 17(1):51-54, 1981.

To determine whether the behavioral effects which narcotic antagonists produce in narcotic naive and narcotic dependent animals result from common mechanisms, the discriminative stimulus properties of the prototype narcotic antagonist, naltrexone, were characterized in both morphine pretreated and normal pigeons. Naltrexone produced in each pigeon a dose related increase in responding on the naltrexone appropriate key which was maximum at 32mg/kg. Doses of naltrexone which maintained stimulus control of behavior also produced decreases in response rate. In contrast, quaternary naltrexone produced stimulus control of responding comparable to naltrexone in only one out of five pigeons, even though quaternary naltrexone was as effective as naltrexone in decreasing the rate of responding. These results suggest that the stimulus properties of naltrexone in narcotic naive animals are primarily the result of central mechanisms. 5 references. (Author abstract modified)

003107 van de Poll, N. E.; de Jonge, F.; van Oyen, H. G.; van Pelt, J.; de Bruin, J. P. C. Netherlands Institute for Brain Research, IJdijk 28 Amsterdam, The Netherlands **Failure to find sex differences in testosterone activated aggression in two strains of rats.** Hormones and Behavior. 15(1):94-105, 1981.

The effect of testosterone on intraspecific aggression in males and females of two strains of rats (WEzob and S3) was examined. Pairs of these rats, gonadectomized and treated either with oil or with testosterone propionate (TP), were tested in three different combinations: OIL, OIL against TP, and TP against TP treated animals. The results of the S3 strain indicate that testosterone treatment of either the subject or the opponents stimulates aggression in both males and females. No sex difference could be determined with respect to the incidence of aggression. In the WEzob strain a stimulatory effect of TP was shown in females but not in males. The absence of a clear stimulatory effect of TP in WEzob males in terms of changes in the total time spent on aggression, however, could suggest incorrectly that TP does not affect aggression in these animals. The possibility of TP having an effect on these males in terms of increasing the intensity of fighting is discussed. 29 references. (Author abstract modified)

003108 Venkatramaiah, S. R. S.V. University, Tirupati-517602, India **Effects of anxiety reduction by behavioural techniques and meprobamate on certain parameters of information theory.** Indian Journal of Clinical Psychology. 8(1):59-63, 1981.

The effects of anxiety reduction by behavioral programming and meprobamate on response uncertainty (RU) and information transmitted (IT) were assessed. Ss were 32 experimentally naive Wistar rats conditioned to the avoidance response by presenting a tone and a shock according to programmed procedures. Meprobamate (135mg/kg) was administered intraperitoneally. The results revealed that meprobamate decreased RU and increased IT. The findings strongly favor the hypothesis that anxiety reduction is achieved by the drug action through measurable reduction in response uncertainty. 26 references. (Author abstract modified)

003109 Villiger, John W.; Dunn, Adrian J. Dept. of Neuroscience, University of Florida College of Medicine, Gainesville, FL 32610 **Phosphodiesterase inhibitors facilitate memory for passive avoidance conditioning.** Behavioral and Neural Biology. 31(3):354-359, 1981.

Evidence is presented that a single, posttrial injection of the phosphodiesterase inhibitors Ro-20-1276 (25mg/kg and 50mg/kg) or isobutylmethylxanthine (IBMX, 75mg/kg) enhances the retention of a one trial passive-avoidance response in male ICR mice. This performance enhancement is not seen when the injection is given 1 h following task acquisition, and no footshock controls do not have lengthened step through latencies at retention testing. This suggests that these drugs facilitate memory formation. At a low dose, posttrial IBMX (25mg/kg) significantly impairs performance. These results are similar to that previously reported for papaverine and suggest that cyclic nucleotides may play a role in memory formation. 10 references. (Author abstract modified)

003110 Wagner, G. C.; Foltin, R. W.; Seiden, L. S.; Schuster, C. R. Dept. of Biopsychology, University of Chicago, Chicago, IL 60637 **Dopamine depletion by 6-hydroxydopamine prevents conditioned taste aversion induced by methylamphetamine but not lithium chloride.** Pharmacology Biochemistry and Behavior. 14(1):85-88, 1981.

The role of dopamine in conditioned taste aversion (CTA) induced by methylamphetamine in male Sprague-Dawley rats was examined. Methylamphetamine induced CTA to sweetened milk was significantly attenuated by intraventricular injection of 6-hydroxydopamine after pargyline and desmethylimipramine pretreatment. This finding indicates that the methylamphetamine induced CTA is dependent on intact dopaminergic neurons. 23 references. (Author abstract modified)

003111 Walker, J. Michael; Berntson, Gary G.; Paulucci, Thomas S.; Champney, Timothy C. Mental Health Research Institute, University of Michigan, 202 Washtenaw Pl., Ann Arbor, MI 48109 **Blockade of endogenous opiates reduces activity in the rat.** Pharmacology Biochemistry and Behavior. 14(1):113-116, 1981.

Naloxone (2mg/kg) substantially reduced general activity in 90 to 120-day-old rats under baseline conditions and after stress induced by swimming. Results suggest that endogenous opioid peptide systems may play an activational role in behavioral regulation under normal conditions as well as during stress. 27 references. (Author abstract modified)

003112 Walker, J. Michael; Berntson, Gary G.; Sandman, Curt A.; Kastin, Abba J.; Akil, Huda. Mental Health Research Institute, University of Michigan, Ann Arbor, MI 48109 **Induction of analgesia by central administration of ORG 2766, an analog of ACTH4-9.** European Jounal of Pharmacology. 69(1):71-79, 1981.

Microinjection of the ACTH4-9 analog ORG-2766 into the periaqueductal gray of male Sprague-Dawley rats produced potent, long-lasting, dose dependent analgesia. Analgesia was not observed after intracerebroventricular injections of ORG-2766. Naloxone did not reduce the analgesia induced by ORG-2766, and morhine tolerance did not diminish the effect significantly. ORG-2766 (up to 10mcM) did not inhibit 3H-naloxone binding to brain opiate receptors in vitro. Results suggest that the ACTH analog does not act through opiate mechanisms and are discussed in relation to a proposed ACTH or alpha-melanocyte stimulating hormone receptor. 33 references. (Author abstract modified)

003113 Walz, Marjorie Ann. University of Mississippi **Behavioral and metabolic alterations in progeny of methadone-treated rats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2580-B, 1981. Ann Arbor, Univ. Microfilms No. 8028237, 140p., 1980.

The impact of chronic methadone treatment on the offspring of treated rats was assessed. Wistar rats of both sexes were given daily methadone doses of 15mg/kg for 60 days prior to mating; treatment of females was continued until weaning of pups. As compared to controls, F-1 pups of treated sires and dams showed decreased body weight, decreased viability, slowed ontogeny of reflexes, reduced exploration up to 2 weeks of age followed by an increase over controls, and decreased defecation. When only the sire received methadone, only the increase in exploratory activity and the decrease in defecation were seen. F-2 offspring showed significantly elevated neonatal mortality and decreased defecation in open-field trials. No clear changes were found in the F-3 generation. A need for clinical studies is indicated to determine how completely these findings may extraplolate to humans. (Journal abstract modified)

003114 Wellman, Paul J.; McIntosh, Pamela; Guidi, Eric. Dept. of Psychology, Texas A&M University, College Station, TX 77843 **Effects of dorsolateral tegmental lesions on amphetamine- and lithium-induced taste aversions.** Physiology & Behavior. 26(2):341-344, 1981.

Lesions of the dorsolateral tegmentum (DLT) attenuated conditioned taste aversion induced by amphetamine (2.0mg/kg), but not that induced by lithium chloride (0.15M) in female Long-Evans rats. The lesioned animals were also moderately hyperphagic. Results suggest that the aversive properties of amphetamine may be mediated by the ventral noradrenergic bundle at the level of the DLT. 28 references. (Author abstract modified)

003115 Wiechman, Beth Elaine. Purdue University **Interactions of diazepam and cocaine in the morphine-treated rat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3000-B, 1981. Ann Arbor, Univ. Microfilms No. 8102720, 326p., 1980.

The pharmacological basis for any interaction of either diazepam or cocaine in rats representing three models of morphine treatment (morphine dependence, morphine withdrawal, and acute morphine) was investigated. Body temperature of both morphine withdrawn and acute morphine rats was less than sham implanted rats following diazepam administration. In morphine withdrawn rats, the enhanced hypothermia is likely the result of an additive effect between diazepam and morphine withdrawal, while acute morphine treatment potentiated the diazepam induced hypothermia. Doses of diazepam reduced motor coordination of all rats for at least 15 minutes. Morphine treatments altered cocaine induced changes in body temperature. Measurement of cocaine induced spontaneous locomotor activity indicated that acute morphine rats manifested depressed activity as compared with the other three groups of rats. Comparison of open-field locomotor activities induced by two other local anesthetics, procaine and lidocaine, indicated that cocaine induced stimulation of activity in morphine treated rats is unique and not shared by other local anesthetics. Although no differences in regional calcium levels were found following treatment with diazepam or cocaine, it is suggested that these drugs may alter calcium levels in one subcellular fraction, and examination of whole brain regions may mask such an effect. (Journal abstract modified)

003116 Winter, J. C. 127 Farber Hall, State University of New York, Buffalo, NY 14214 **Drug-induced stimulus control and the concept of breaking point: LSD and quipazine.** Psychopharmacology. 72(2):217-218, 1981.

Discriminative stimulus control was estabished in rats (N = 12) with lysergic acid diethylamide (LSD) and saline using a two lever response choice task and a FR10 schedule of water reinforcement. Ss were then tested once per week with either LSD or quipazine and every other week the test ratio was doubled, i.e., each drug was tested at ratios of 10, 20, 40, and 80. In contrast with LSD, which maintained stimulus control at all ratios, LSD appropriate responding following quipazine declined significantly at FR80. In addition, five of eight Ss tested with quipazine failed to complete the FR80 in 15 min. In subsequent experiments, the breaking point, which is defined as the number of LSD appropriate responses prior to emission of 10 responses on the saline appropriate lever, was determined for LSD and for quipazine. Mean values for LSD and quipazine were 161 and 65, respectively. Results suggest that conclusions regarding the stimulus properties of LSD and quipazine may be altered as a function of cross-test conditions. 7 references. (Author abstract modified)

003117 Wolf, William A.; Kuhn, Donald M.; Lovenberg, Walter. Kuhn: Section on Biochemical Pharmacology, Hyper-

tension Endocrine Branch, NHLBI, NIH, Bethesda, MD 20205 **Pressor effects of dorsal raphe stimulation and intrahypothalamic application of serotonin in the spontaneously hypertensive rat.** Brain Research. 208(1):192-197, 1981.

The pressor effects of dorsal raphe stimulation and intrahypothalamic application of serotonin were investigated in the spontaneously hypertensive rat. Electrical stimulation of the dorsal raphe nucleus or direct microinjection of serotonin into the preoptic region of the anterior hypothalamus produces a transient rise in arterial blood pressure in both spontaneously hypertensive rats (SHR) and Wistar-Kyoto (WKY) controls. SHRs are more responsive to raphe stimulation but they are somewhat less responsive to serotonin injections when compared to WKYs. The serotonin antagonist metergoline blocks the pressor response to serotonin in both strains. These results suggest that the central serotonergic neuronal system plays a similar, but not identical, role in blood pressure modulation in hypertensive and normotensive rats. 25 references. (Author abstract modified)

003118 Wu, Ming-Fung; Lind, Marcia D.; Stapleton, June M.; Reid, Larry D. Rensselaer Polytechnic Institute, Troy, NY 12181 **Dose-response relationship between naloxone injections and intake of sucrose solution.** Bulletin of the Psychonomic Society. 17(2):101-103, 1981.

The effects of various doses of naloxone on the intake of sucrose solutions were investigated in rats. When individually housed rats are given, daily, a 1 hour opportunity to drink a 10% solution of sucrose, they avidly take large amounts. When given naloxone, the prototypic antagonist of morphine like effects, the intake of sucrose is attenuated. Doses as small as .065mg/kg reliably, but slightly, reduce intake and doses greater than 1.0mg/kg dramatically reduce intake. Results are discussed in relation to endorphinergic systems regulating energy balance. 10 references. (Author abstract modified)

003119 Yutrzenka, G. J.; Davis, J. S.; Parmar, S. S. Parmar: Dept. of Physiology, University of North Dakota School of Medicine, Grand Forks, ND 58202 **A possible role for catecholamine neurotransmitters in the anticonvulsant activity of chlordiazepoxide.** Research Communications in Psychology, Psychiatry and Behavior. 5(4):407-418, 1980.

The role of catecholamines in the CNS as mediators of the anticonvulsant activity of chlordiazepoxide was investigated. Chlordiazepoxide in doses of 2.5mg/kg and 5.0mg/kg provided dose dependent protection from pentylenetetrazol induced seizures in male albino mice. Treatment with either alpha-methyl-p-tyrosine, phenoxybenzamine, propranolol, or L-dopa prior to the administration of chlordiazepoxide potentiated the anticonvulsant activity of chlordiazepoxide. This was reflected by an increase in the degree of protection from convulsions, a decrease in ED50 value, and an increased time to onset of seizures in pretreated mice. Administration of disulfiram prior to the administration of chlordiazepoxide was shown to provide no significant increase in the anticonvulsant activity of chlordiazepoxide. These results indicate the role of catecholamine neurotransmitters as possible mediators of the anticonvulsant activity of chlordiazepoxide. 38 references. (Author abstract modified)

003120 Zigmond, Michael J.; Stricker, Edward M. Dept. of Biological Sciences and Psychology, University of Pittsburgh, Pittsburgh, PA 15213 **Behavioral test for detection of subclinical brain damage: an experimental model.** In: Merikangas, J., Brain-behavior relationships. Lexington, MA, Lexington Books, 1981. 217 p. (p. 93-112).

Some of the basic characteristics of catecholaminergic neurons in the brain are reviewed, evidence for compensatory neurochemical changes which appear to minimize the functional impairments produced by 6-hydroxydopamine (6-HDA) is presented, and the implications of these adaptive responses for the development of clinical instruments to detect such neuronal damage are discussed. The data show that extensive destruction of central catecholaminergic neurons has little observable impact on behavior. Following such lesions several neurochemical changes occur in residual terminals and target cells. These changes are predictable from pharmacological studies of synaptic homeostasis in intact brain and may serve to obscure the extensive neural damage. From these neurochemical effects, pharmacological challenges have been derived as diagnostic tools for detecting the presence of damage to these neuronal systems. A second approach for detecting damage has been to expose the animal to conditions which are outside the limits of compensation, thereby eliciting measurable neurological dysfunctions. 43 references.

05 TOXICOLOGY AND SIDE EFFECTS

003121 Adams, Perrie M.; Fabricant, Jill D.; Legator, Marvin S. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, Galveston, TX 77550 **Cyclophosphamide-induced spermatogenic effects detected in the F1 generation by behavioral testing.** Science. 211(4477):80-82, 1981.

The effects of cyclophosphamide treatment of male rats and some of their female mates on the behavior of offspring were studied. Fisher 344 male rats were treated with 10 milligrams per kilogram of body weight by cyclophosphamide for 5 weeks and subsequently mated to females previously treated with saline or cyclophosphamide. Compared to controls, the first generation progeny of the cyclophosphamide treated males exhibited behavior deficits on motor reflex tests, motor coordination, and locomotor activity. It is suggested that the data could indicate a chemically induced genetic effect manifested by behavioral alterations. 12 references. (Author abstract modified)

003122 Antelman, Seymour M.; Kocan, Donna; Rowland, Neil; De Giovanni, Lesley; Chiodo, Louis A. 442 Crawford Hall, University of Pittsburgh, Pittsburgh, PA **Amitriptyline provides long-lasting immunization against sudden cardiac death from cocaine.** European Journal of Pharmacology. 69(1):119-120, 1981.

A single injection of amitriptyline conferred complete and long lasting protection against sudden cardiac death (SCD) induced by cocaine in male Sprague-Dawley rats. More than half of the rats injected with 35mg.kg i/p. cocaine died within 15 seconds. Treatment with amitriptyline (10mg/kg) 1 hour before cocaine afforded no protection against SCD. However, none of the nine rats treated with the tricyclic antidepressant 10 days prior to cocaine died, and only one of six animals treated with amitriptyline 24 hours prior to cocaine died. This protection against SCD may be related to the time dependent intensification of the effect of tricyclic antidepressants on the sensitivity of dopamine autoreceptors in the substantia nigra. 5 references.

003123 Clarke, Claire; Hobbiger, F.; Sheldon, P. W. Radiobiology Unit, Dept. of Physics, Institute of Cancer Research, Sutton, Surrey SM2 5PX, England **Acetylcholinesterase and cholinesterase activities in the mouse cerebellum following misonidazole treatment.** European Joural of Pharmacology. 69(2):209-211, 1981.

Misonidazole (five doses of 0.5mg/g i/p. over 4 days) did not alter acetylcholinesterase and cholinesterase activities in C57BL/Cbi mouse cerebellum. Enzyme inhibition occurred only with serum levels in excess of those used clinically. It is concluded that the clinical neurotoxicity of the drug cannot be

attributed to an effect on cholinesterases. 6 references. (Author abstract modified)

003124 De Luca, B.; Carleo, R.; Cerciello, A.; Cioffi, L. A. Institute of Human Physiology, University of Naples, 1st Medical School, I-80138 Napoli, Italy **Cortical control of neurally mediated arrhythmogenic properties of desacetyllanatoside C.** Neuropharmacology. 20(3):297-299, 1981.

The effects of bilateral cortical spreading depression on the neurally mediated arrhythmogenic properties of digitalis were studied in Sprague-Dawley rats anesthetized with nembutal. Functional decortication significantly increased the dose of desacetyllanatoside-C required to induced cardiac effects, but did not change the basal heartrate or electrocardiogram. The higher resistance of decorticated rats may be a direct consequence of cortical ablation, but it is more likely that subcortical structures such as the hypothalamus are deprived of the excitatory influence of the cerebral cortex. 10 references. (Author abstract modified)

003125 Ford, Karen Elizabeth. University of Mississippi **Chronic effects of neuroleptics having high or low incidence of extrapyramidal side-effects upon force, duration and rate of operant response in rats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2818-B, 1981. Ann Arbor, Univ. Microfilms No. 8028225, 207p., 1980.

A relatively new, highly effective antipsychotic compound, clozapine (CLOZ), reported to have few if any extrapyramidal side-effects (EPS) was compared with haloperidol and chloridazepoxide in an attempt to develop animal test procedures capable of selecting other drugs with high antipsychotic activity and low EPS. Effects of drugs were compared on force, duration, and rate of response for rats performing under a FR 30 schedule of water reinforcement. The initial effects of haloperidol and CLOZ were similar in that both substantially descreased response rate and tended to increase response duration; neither drug had a large effect on peak force. Behavioral supersensitivity following termination of chronic neuroleptic treatment was not demonstrated and this failing is discussed. The ability to discriminate among haloperiodol, CLOZ, and chloridazepoxide on the basis of the discriminant function for the three dependent variables was not found to exceed greatly the discrimination provided on the basis of the linear function for the rate measure alone. Nevertheless, it is suggested that continued use of the present methodology (i.e., the combination of the joint use of intensive and rate measures of operant response and multivariate analysis methods) in future research may enable the development of a relatively economical animal model for testing new compounds with high antipsychotic efficacy but low EPS liability. (Journal abstract modified)

003126 Frigeni, V.; Bruno, F.; Carenzi, A.; Racagni, G. Zambon Farmaceutici Research Lab., Bresso, Milano, Italy **Difference in the development of tolerance to morphine and d-ala2-methionine-enkephalin in C57 BL/6J and DBA/2J mice.** Life Sciences. 28(7):729-736, 1981.

The analgesic effect elicited by intracerebroventricular (icv) administration of either morphine or d-ala2-methionine-enkephalin (d-ala2-met-enk) was studied during the onset and offset of morphine tolerance in DBA/2J (DBA) and C57 BL/6J (C57) strains of mice. DBA mice become tolerant to the analgesic effect of icv morphine after receiving eight subcutaneous (sc) injections of the ED50 of morphine for analgesia. In C57 mice tolerance to icv morphine is evident after only a single sc injection of morphine ED50. However, development of cross-tolerance to the analgesic effect of d-ala2-met-enk is similar in both strains of mice. Recovery of the analgesic effect of morphine and d-ala2-met-enk is slower in C57 than in DBA mice. 16 references. (Author abstract modified)

003127 Guinn, Meredith M.; Bedford, John A.; Wilson, Marvin C. Wilson: Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MI 38677 **Antagonism of intravenous cocaine lethality in nonhuman primates.** Clinical Toxicology. 16(4):499-508, 1980.

The use of propranolol, diazepam, and chlorpromazine in the treatment of cocaine toxicity was studied in male cynomolgus monkeys. Continuous i.v. infusion of cocaine at the rate of 0.5mg/kg/minute produced a response profile in monkeys similar to the reaction" observed in humans. Chlorpromazine and diazepam both increased the seizure threshold in cocaine treated monkeys. Diazepam was more effective in protecting against convulsions, but chlorpromazine was more effective in abolishing the behavioral excitation associated with cocaine toxicity. Propranolol reduced the cardiostimulatory effects of cocaine, but enhanced some of its behavioral effects, as well as its lethality. 3 references.

003128 Laties, Victor G.; Evans, Hugh L. Dept. of Radiation Biology, University of Rochester School of Medicine and Dentistry, Rochester, NY 14642 **Research strategies for assessing the effects of methylmercury on behavior.** Revista Mexicana de Analisis de la Conducta. 6(1):27-37, 1980.

A strategy for dealing with the assessment of the toxic effects of methylmercury on behavior is presented, based on experiments with pigeons engaged in schedule controlled behavior. The strategy consists of producing in other ways some of the signs that characterize methylmercury poisoning and of contrasting the behavioral effects of these procedures with those of methylmercury. The data obtained from several experiments show that methylmercury affects the performance of the pigeon on a schedule of reinforcement that requires discrimination of amount of behavior. This effect appears rapidly following considerable exposure to low doses of the substance. 18 references. (Journal abstract modified)

003129 Ohmoto, Takashi; Matsumoto, Yuzo; Nakamura, Shigeo; Miyamoto, Toshihiko. Dept. of Neurological Surgery, Okayama University Medical School, Okayama, Japan **Experimental studies on L-dopa induced dyskinesia.** Brain and Nerve. 32(2):161-169, 1980.

Dyskinesia induced by L-dopa was studied. Radiofrequency lesions were produced in the unilateral ventromedial tegmental area (VMT) of African green monkeys (Cercopithecus sobaeus) and tremor developed subsequently. Intraperitoneal injections of L-dopa, L-dopa combined with MK-486, ET-495, and CB-154 all relieved the tremor and induced dyskinesia. Further investigation of various centrally acting drugs and enzyme inhibitors of catecholamine metabolism in these monkeys gave evidence that dyskinesia induced by L-dopa might be due to the direct stimulation of dopamine receptors (by excessive accumulation of dopamine in the striatum). Another radiofrequency lesion, in the ventrolateral nucleus of the thalamus ipsilateral to the VMT lesion, caused the tremor to disappear and no dyskinesia was induced by the administration of L-dopa. Results suggest that: denervation supersensitivity at the postsynaptic receptors is a basic condition for L-dopa to induce dyskinesia; and the caudate nucleus is not pharmacologically uniform. 37 references. (Journal abstract modified)

003130 Pazo, Jorge H.; Tumilasci, Omar R.; Medina, Jorge H. Universidad de Buenos Aires, 2da Catedra de Fisiologia Humana, Laboratoria de Neurofisiologia, Paraguay 2155, 1121 Buenos Aires, Argentina **Studies on the mechanisms of L-dopa-**

induced salivary secretion. European Journal of Pharmacology. 69(3):255-261, 1981.

Systemic administration of L-dopa and dopamine in Wistar rats elicited a sustained secretory response in the submaxillary glands, which could be blocked by pretreatment with phentolamine plus propranolol. Acute unilateral sympathectomy (decentralization or denervation) reduced the response to L-dopa by 41 to 48%, but did not alter the response to dopamine. Chemical sympathectomy by hexamethonium caused a 45% reduction in the secretory response to L-dopa, but parasympathectomy did not modify the response to L-dopa or dopamine. Pretreatment with haloperidol reduced the salivary secretion response to L-dopa in animals with innervated glands, but not in those with denervated glands; haloperidol did not alter the response to dopamine. Results suggest that the salivary secretion induced by L-dopa is mediated by central dopaminergic receptors and peripheral adrenergic receptors. 27 references. (Author abstract modified)

003131 Rebec, George V.; Alloway, Kevin D.; Bashore, Theodore R. Dept. of Psychology, Indiana University, Bloomington, IN 47405 **Differential actions of classical and atypical antipsychotic drugs on spontaneous neuronal activity in the amygdaloid complex.** Pharmacology Biochemistry and Behavior. 14(1):49-56, 1981.

Clozapine (20.0mg/kg i.p.) typically produced a prolonged increase in activity in amygdaloid neurons in male Sprague-Dawley rats, but haloperidol (2.0mg/kg i.p.) generally failed to alter amygdaloid neuronal firing rates. The depression of firing rate induced by 1.0mg/kg d-amphetamine was reversed by clozapine, but not by haloperidol. Results suggest that neurons in the amygdaloid complex are more responsive to antipsychotic drugs devoid of extrapyramidal side-effects than to antipsychotic drugs that elicit parkinsonian like motor dysfunctions. 52 references. (Author abstract modified)

003132 Reynolds, Norman C., Jr.; Miska, Robert M. Dept. of Medicine, University of Wisconsin Medical School, 950 North 12 St., Milwaukee, WI 53233 **Safety of anticonvulsants in hepatic porphyrias.** Neurology. 31(4):480-484, 1981.

To evaluate the safety of newer anticonvulsants in hepatic porphyrias, clonazepam, carbamazepine, valproate, bromide, and paraldehyde were incubated in chick embryo hepatocyte cultures. Porphyrin was increased by carbamazepine, clonazepam, and valproate. Therefore, these agents should be avoided or used with caution in porphyric patients. It is noted that the list of unsafe agents also includes barbiturates, primidone, phenytoin, mephenytoin, ethotoin, ethosuximide, methsuximide, phensuximide, and trimethadone. Alternative approaches to acute porphyric attacks with seizures are discussed. 33 reference. (Author abstract modified)

06 METHODS DEVELOPMENT

003133 Adamec, Robert E.; King, Gary A. Scott Laboratory, Wellesley Hospital, 160 Wellesley Street East, Toronto, Ontario M4Y 1J3, Canada **Power spectral analysis of the flash-evoked after-discharge.** Electroencephalography and Clinical Neurophysiology. 51(2):201-204, 1981.

A quantitative measure of the flash evoked afterdischarge (FEAD) in the rat was derived using power spectral analysis. The utility of this method of measurement was demonstrated by quantifying the suppression of FEAD by the drug yohimbine. This method of quantification would facilitate the use of FEAD for the purpose of screening antiepileptic drugs. Spectral analysis would seem preferable to visual inspection of FEAD in terms of efficiency and reliability of measurement. It would also be preferable to simple averaging of FEADs in view of the variations in phase relationships from one FEAD to another. 4 references. (Author abstract modified)

003134 Albert, D. J. Psychology Dept., University of British Columbia, Vancouver, BC, Canada V6T 1W5 **Infusions into the oculomotor nucleus or nerve: a method of estimating the dosage at which transmitter antagonists infused intracranially produce nonspecific blocking of neural activity.** Pharmacology Biochemistry and Behavior. 14(1):67-73, 1981.

A method for estimating the dose at which nonspecific suppression effects of intracranially infused transmitter agonists appear is described. Changes in pupillary dilation are recorded after infusion of the test agent into the oculomotor nucleus or efferent oculomotor nerve. A suppression of activity in this nucleus or nerve results in pupillary dilation, whereas enhanced neural activity results in pupillary constriction. 35 references.

003135 Bernasconi, R.; Bittiger, H.; Heid, J.; Martin, P. Research Dept. of the Pharmaceuticals Division, CIBA-Geigy Ltd., Basel, Switzerland **Determination of GABA levels by a (3H)muscimol radioreceptor assay.** Journal of Neurochemistry. 34(3):614-618, 1980.

A (3H)muscimol radioreceptor assay was used to measure regional levels of GABA in male MAOI mouse brain. The method is based on the competitive inhibition of (3H)muscimol binding to the GABA receptor by GABA extracted from the tissue. The sensitivity of the assay was 5pmol GABA. The validity of the assay was confirmed by parallel gas chromatographic measurements. The technique can be used for unpurified tissue extracts. 19 references. (Author abstract modified)

003136 Bloom, F. E.; Siggins, G. R.; Henriksen, S. J. Arthur V. Davis Center for Behavioral Neurobiology, Salk Institute, San Diego, CA 92138 **Electrophysiologic assessment of receptor changes following chronic drug treatment.** Federation Proceedings. 40(2):166-172, 1981.

Considerations in the electrophysiologic assessment of receptor changes following chronic drug treatment are discussed. Electrophysiological techniques offer a direct cellular approach to questions of neurotransmitter receptor/drug interaction and are capable of providing detailed information on the functional status of receptors not readily attained from studies on disrupted cell systems. The development of improved methods for the quantitative comparison of changes in transmitter responsiveness after chronic experimental manipulations now makes possible the application of these electrophysiologic approaches to neuropharmacology. The technical and biologic considerations that underlie the analysis of these problems by electrophysiology are reviewed. In addition, some of the interpretative pitfalls are illustrated; and strategies for assessment of transmitter response are outlined. 49 references. (Author abstract modified)

003137 Calverley, Diane G.; Baker, Glen B.; Coutts, Ronald T.; Dewhurst, William G. Baker: Dept. of Psychiatry, Clinical Sciences Building, University of Alberta, Edmonton, Alberta, Canada T6G 2G3 **A method for measurement of tranylcypromine in rat brain regions using gas chromatography with electron capture detection.** Biochemical Pharmacology. 30(8):861-867, 1981.

A gas chromatography method, using electron capture detection for measurement of the monoamine oxidase inhibitor tranylcypromine (TCP) in rat brain regions, is described. The analytical method involves extraction of the drug from tissue homogenate with a liquid ion exchange resin and back extraction into acid. TCP is then acetylated and derivatized with pentafluoropropionic anhydride or trifluoroacetic anhydride for gas chro-

matographic analysis. Conditions for analysis on both packed and capillary columns are described. The method has been used to quantify TCP in rat brain regions after three different dosage/time schedules of TCP administration. The presence of N-acetyl-TCP has been demonstrated in brain tissue from rats treated with TCP. 21 references. (Author abstract)

003138 Horsburgh, Ross J. Dept. of Psychiatry, School of Medicine, University of Auckland, Private Bag, Auckland, New Zealand **Increases in skin resistance of white rats following scopolamine injection.** Pharmacology Biochemistry and Behavior. 14(1):1-3, 1981.

Male Sprague-Dawley rats were injected with saline or 0.6mg/kg scopolamine and placed on a metal grid. The grid was wired to a transistor based detector that determined whether the animal's resistance was above or below a preset threshold value. Over 5 minute test sessions, rats treated with scopolamine had resistances above each of the three threshold values used (5, 10, and 15 megohms) for significantly longer than did control rats. Since increases in resistance usually lower the shock received, this drug induced alteration in resistance should be taken into account in certain pharmacological experiments. 12 references. (Author abstract modified)

003139 Lackovic, Z.; Parenti, M.; Neff, N. H. Neff: Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Simultaneous determination of femtomole quantities of 5-hydroxytryptophan, serotonin and 5-hydroxyindoleacetic acid in brain using HPLC with electrochemical detection.** European Journal of Pharmacology. 69(3):347-352, 1981.

A method for the determination of 5-hydroxytryptophan, 5-hydroxytryptamine, and 5-hydroxyindoleacetic acid in brain is described. Brain proteins are precipitated with Zn(OH)2. The indoles in the supernatant are separated by high pressure liquid chromatography in less than 8 minutes on a reverse phase column and detected electrochemically. As little as 38fmole of hydroxyindole compound can be detected and quantitated. 15 references. (Author abstract modified)

003140 McKinney, William T., Jr. University of Wisconsin Medical School, Madison, WI 53706 **/Pharmacological evidence for catecholamine involvement in animal aggression./** Discussion of paper by Dr. Klaus Miczek. Psychopharmacology Bulletin. 17(1):62-63, 1981.

Methodological issues in the study of catecholaminergic involvement in animal aggression are discussed. It is contended that there is a great need to dissect behavioral effects into their components and to describe the total social effects of a drug. In an ethological sense, this involves careful understanding of the precipitants, description of the behaviors into their component parts, sequential aspects, and consequences. It is noted that aggressive behaviors are often species specific, and are sometimes misinterpreted. (Author abstract modified)

003141 Mori, Junko; Hori, Nobuaki; Katsuda, Nobuo. Dept. of Physiology, National Defense Medical College, Tokorozawa, Saitama 359, Japan **A new method for application of horseradish peroxidase into a restricted area of the brain.** Brain Research Bulletin. 6(1):19-22, 1981.

A new method for application of horseradish peroxidase (HRP) into very restricted brain areas is described. Crystalline HRP was packed into the tips of fine micropipettes having tip size of about 50 mcm in outer diameter. The HRP micropipettes were stereotaxically implanted into the globus pallidus of rats. After survival period of 6 to 48 hours, brain was excised and HRP distribution was investigated following conventional procedures. The diffusion area of HRP at the application sites was restricted within the limits of 200 to 250 mcm in diameter completely inside the globus pallidus. It is shown that the slowly solubilized crystalline HRP was taken up by the nerve terminals in the globus pallidus, and transported retrogradely to the cell bodies in the pars compacta of substantia nigra, indicating the existence of nigro/pallidal projections. 20 references. (Author abstract modified)

003142 Ostrow, David G.; Southam, Arthur S.; Davis, John M. Psychiatary Section, Lakeside V.A. Hospital, Northwestern University Medical School, 333 East Huron St., Chicago, IL 60611 **Lithium-drug interactions altering the intracellular lithium level: an in vitro study.** Biological Psychiatry. 15(5):723-739, 1980.

An in vitro incubation system using a bicarbonate/CO2 buffer system which can predict accurately the in vivo red cell:plasma lithium ratio (LR) is described. Piperazine phenothiazines produced the most marked elevations of intracellular lithium, doubling the LR when added to the system. The aminoalkyl phenothiazines and thioxanthenes were somewhat less active, while the nonphenothiazine antipsychotics, such as loxapine, haloperidol and molindone, produced only minor increases in the LR. Tricyclic antidepressants produced a 20% to 30% increase, while other types of antidepressants, the major neurotransmitters and their metabolites, hormones, benzodiazepines and diuretics did not show any activity. of the antihypertensives studied, only hydralazine had an effect on the LR. The effect of fluphenazine on the intracellular lithium level was paralleled by an increase in intracellular sodium and was blocked by dipyridamole. Several important lithium/drug interactions may contribute to an increased LR. Caution is urged in interpretation of studies of the relationship between the LR and clinical aspects of the affective disorders. 52 references. (Author abstract modified)

003143 Palermo, Nick N.; Brown, H. Keith; Smith, Donn L. Brown: Dept. of Pharmacology and Therapeutics, University of South Florida, College of Medicine, 12901 North 39th St., Tampa FL 33612 **Selective neurotoxic action of capsaicin on glomerular C-type terminals in rat substantia gelatinosa.** Brain Research. 208(2):506-510, 1981.

The selective neurotoxic action of capsaicin on glomerular C-type terminals in rat substantia gelatinosa was demonstrated. Since the C-terminals may be essential components of the circuitry for modulation of pain, it is suggested that capsaicin induced analgesia is the result of this neurotoxic action. It is speculated that capsaicin may prove to be a useful tool in determining the role of glomerular C-type terminals in this and other sensory relay nuclei. Data indicate that the selective neurotoxic action of capsaicin for glomerular C-type terminals is linked to substance-P depletion in the substantia gelatinosa. 18 references. (Author abstract modified)

003144 Purves, Robert. Dept. of Anatomy and Embryology, University College London, Gower Street, London WC1E 6BT, England **Ionophoresis -- progress and pitfalls.** Trends in NeuroSciences. 3(10):245-247, 1980.

The neurobiological technique of ionophoresis (iontophoresis), the release of substances from micropipettes by electric currents, is reviewed. It is noted that the method was invented by Nastuk, who used an electrically controlled microjet of acetylcholine to mimic the physiological behavior of the nerve terminal during neuromuscular transmission. Del Castillo and Katz exploited the localized nature of ionophoretic release to map the distribution of acetylcholine receptors on the membrane of muscle fibers. Currently, the chief uses of ionophoresis include: microapplication of drugs or neurotransmitters to the surface of

suitably receptive cells; intracellular injection of fluorescent dyes or other markers; intracellular injection of drugs; and alteration of intracellular ion concentrations. 14 references. (Author abstract modified)

003145 Slaughter, Malcolm M.; Miller, Robert F. Dept. of Opthalmology, Washington University School of Medicine, St. Louis, MO 63110 **2-Amino-4-phosphonobutyric acid: a new pharmacological tool for retina research.** Science. 211(4478):182-185, 1981.

The use of 2-amino-4-phosphonobutyric acid as a new pharmacological tool for retina research is described. It is noted that information processing in the vertebrate retina occurs in two separate channels known as on and off channels. When intracellular electrophysiological recordings were obtained from the perfused retina eyecup preparation of the mudpuppy (Necturus maculosus), the addition of 2-amino-2-phosphonobutyric acid to the bathing medium blocked all responses in the on channel but left intact the off responses including off ganglion cell discharge. 2-Amino-4-phosphonobutyric acid blocks the light response of the on bipolar cell by mimicking the endogenous photoreceptor transmitter. 13 references. (Author abstract modified)

003146 Towell, John F.; Erwin, V. Gene. School of Pharmacy, University of Colorado, Boulder, CO 80309 **Characterization of the isolated perfused mouse brain as a system for neurochemical studies.** Brain Research. 209(2):476-481, 1981.

The preparation of the isolated perfused mouse brain (IPMB) is described along with its electrophysiological, morphological, biochemical, and pharmacological properties. Using high performance liquid chromatography with electrochemical detection, the primary metabolite of mammalian CNS norepinephrine, 3-methyoxy-4-hydroxyphenethyleneglycol (MHPG) was measured in the perfusate at 15 minute intervals. The rate of MHPG production was found similar to literature values of the rate of norepinephrine turnover in mouse brain. MHPG production rate in the IPMB was blocked by pretreatment with 6-hydroxydopamine and was increased by pretreatment with reserpine. 22 references. (Author abstract)

003147 Wieraszko, Andrzej. Dept. of Biochemistry of the Nervous System and Muscle, Nencki Institute of Experimental Biology, Pasteura 3, 02-093 Warszawa, Poland **Modified cup technique for microestimation of the release and uptake of neurotransmitters in brain slices.** Brain Research. 194(2):561-565, 1980.

A modified cup technique for determining the intensity and localization of the uptake and release of neurotransmitters in brain slices is described. The technique can be used to map uptake and release processes in various regions of the slice following electrical or chemical stimulation. The use of this technique to study glutamate uptake and release in hippocampal slices is described. 15 references.

003148 Yoshino, Jun E.; Baxter, Daniel E.; Hsiao, Ting H.; McClure, William O. McClure: Section of Cellular Biology, Dept. of Biological Sciences, University of Southern California, Los Angeles, CA 90007 **Release of acetylcholine from rat brain synaptosomes stimulated with leptinotarsin, a new neurotoxin.** Journal of Neurochemistry. 34(3):635-642, 1980.

The effect of leptinotarsin, a neurotoxin protein found in the hemolymph of potato beetles of the genus Leptinotarsa, was studied in male Sprague-Dawley rat synaptosomes preloaded with (3H)choline. Leptinotarsin from two species, L. haldemani (leptinotarsin-h) and L. decemlineata (leptinotarsin-d), induced the release of radioactivity. However, the kinetics and dose/release curves of toxins from the two species differed. Toxins from both species were partially purified, and leptinotarsin-h did not appear to be identical to leptinotarsin-d. The purified toxins prove to be useful tools for studying the release of acetylcholine. 15 references. (Author abstract modified)

CLINICAL PSYCHOPHARMACOLOGY

07 EARLY CLINICAL DRUG TRIALS

003149 Boucharlat, Jacques. Centre de Psychotherapie, C.H.U., Hopital Sud de Grenoble, F-38130 Echirolles, France /**Perspectives on Prazinil (carpipramine): a disinhibiting agent with no neuroleptic activity. A review of 38 cases.**/ Le point sur le Prazinil ou carpipramine: un medicament desinhibiteur sans pouvoir neuroleptique. A propos de 38 observations. Psychologie Medicale. 12(13):2801-2807, 1980.

A study was conducted to verify the clinical properties of carpipramine. Previous studies have shown carpipramine to be effective in treating schizophrenics with deficiency syndrome, depressive syndromes, asthenic syndromes due to detoxification, and psychasthenic states. The majority of patients of the 38 cases, 26 were followed to conclusion were schizophrenics with apragmatism predominating. Overall results, as well as tolerance, were good. 17 references.

003150 Calandra, C.; Roxas, M.; Rapisarda, V. Universita degli Studi di Catania, Clinica Psichiatrica, Catania, Italy /**The antidepressant action of sulpho-adenosyl-L-methionine (SAMe) compared with that of chloripramine: hypothetical interpretations of the mechanism of action.**/ Azione antidepressiva della SAMe a paragone della clorimipramina: ipotesi interpretativa del meccanismo d'azione. Minerva Psichiatrica. 20(2):147-152, 1979.

The treatment of depressed patients with sulpho-adenosyl-L-methionine (SAMe), as opposed to chlorimipramine, was studied through personal experience. The sample consisted of 24 depressive patients, between ages 18 and 76, who were divided into two groups of 12 subjects each. The first group was treated with 100 mg of chlorimipramine daily for 15 days; the second group was administered 150mg of SAMe daily for the same period of time. The results indicate that both drugs have the same degree of antidepressant activity. Reference is made to the fact that the SAMe was tolerated perfectly and did not cause any unwanted side-effects. 16 references. (Journal abstract modified)

003151 Caldwell, Henry C.; Westlake, Wilfred J.; Schriver, Robert C.; Bumbier, Edgar E. Research and Development Division, Smith Kline and French Laboratories, Philadelphia, PA 19101 **Steady-state lithium blood level fluctuations in man following administration of a lithium carbonate conventional and controlled-release dosage form.** Journal of Clinical Pharmacology. 21(2):106-109, 1981.

Steady-state lithium blood level fluctuations were examined in 16 normal volunteers following administration of lithium carbonate in conventional immediate release form and in a controlled release dosage form. These cross-over studies at steady-state show that the controlled release tablet produced a smoother curve than did the conventional capsule with no loss of total bioavailability. Quantitatively, the capsule produced about 1.4 times more fluctuation in serum lithium values than did the tablet. 9 references. (Author abstract modified)

003152 Chabrand, Pierre; Pandelon, Rene. Centre Hospitalier Regional, F-30006 Nimes Cedex, France /**An open study of maprotiline 75mg in the treatment of depressive states.**/ Etude ouverte de la maprotiline 75mg dans le traitement des etats depressifs. Psychologie Medicale. 12(3):695-701, 1980.

The effect of maprotiline on 20 psychiatric patients was studied. The majority of Ss received 75mg of maprotiline in a single evening dose; the rest received 150mg in a single evening dose. The length of treatment ranged from 3 weeks to 3 months. Results show that the thymoanaleptic effect is comparable to that of the tricyclic antidepressants and that tolerance of maprotiline is better. Changes in mood occurred rapidly, within 3 to 7 days of the onset of treatment. The single dose of maprotiline is thought to represent an advantage in outpatient treatment and to facilitate an improved tolerance of the drug. 77 references. (Journal abstract modified)

003153 Conde-Lopez, Valentin. Facultad de Medicina, Valladolid, Spain /**A double-blind crossed clinical study with a new psychopharmaceutical: tiadipone (QM-6008), diazepam, and a placebo.**/ Estudio clinico doble ciego cruzado con un nuevo psicofarmaco: la tiadipona (QM-6008), diacepam y placebo. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(6):409-442, 1980.

The chemical characteristics of a new psychotropic drug, tiadipone, or QM-6008 (6,7-tetramethylene-5-phenyl-1,2-dihydro-3H-thieno-(2,3-e)-1,4-diazepi n-2-one) and the basic pharmacological findings in humans and animals are described. Two clinical neuropharmacological steps were performed: the double-blind crossed clinical design with tiadipone, diazepam, and piridoxine base as a placebo, and the controlled parameters, including Zung's Self-Rating Depression scale of symptoms translated into Spanish, the Hamilton Depression Scale, and Overall's Brief Psychiatric Rating Scale. The results show that tiadipone does not present either clinical or psychometric antidepressive effects. No significant differences were found in the anxiolytic benzodiazepinic action of tiadipone and diazepam. There were no side-effects from psychostimulant effects. A dosage of 75mg per day in three doses was found to be the most effective. 28 references. (Journal abstract modified)

003154 DeVane, C. L.; Savett, M.; Jusko, W. J. Jusko: Clinical Pharmacokinetics Laboratory, Millard Fillmore Hospital, 3 Gates Circle, Buffalo, NY 14209 **Desipramine and 2-hydroxy-desipramine pharmacokinetics in normal volunteers.** European Journal of Clinical Pharmacology. 19(1):61-64, 1981.

Disposition characteristics of desipramine and its metabolite, 2-hydroxy-desipramine, were determined in four healthy male volunteers following an oral 50mg dose of desipramine. Nonlinear least-squares regression of concentration time data indicate that parent drug disposition could be described by a one compartment open pharmacokinetic model for two Ss and by a two compartment model for two other Ss. The early appearance of 2-hydroxy-desipramine and its peak concentration indicate that desipramine probably undergoes presystemic elimination partly through formation of 2-hydroxy-desipramine. The substantial production of 2-hydroxy-desipramine, as reflected by the area under its concentration time curve which was 51% to 94% of that for the desipramine, indicates that accumulation will occur following multiple dosing. As 2-hydroxy-desipramine may possess antidepressant activity, future studies designed to assess the therapeutic effect of desipramine should account for the presence of its pharmacologically active metabolite. 18 references. (Author abstract)

003155 Dordain, G.; Puech, A. J.; Hecquet, S.; Paturaud, J. P.; Simon, P. Clinique Neurologique, C.H.U. de Clermon-Ferranc, B.P. 69, F-63003 Clermont-Ferrand Cedex, France /**Difficulties encountered during a controlled study of a new hypnotic drug (triazolam) by a group of general practitioners.**/ Difficultes rencontrees lors de la realisation de l'essai controle d'un nouvel

hypnotique (triazolam) par un groupe d'omnipraticiens. Therapie. 35(1):119-124, 1980.

The efficacy of a new hypnotic drug, triazolam, was compared to that of nitrazepam. Ten physicians were instructed to conduct an experiment involving both drugs with a total of 47 patients. Any subjects experiencing insomnia were instructed to take one medication one night and the other medication the next night. Each subject recorded the following data: time needed to fall asleep, quality and duration of sleep, number of times awakened, the quality of morning wake-up, concentration capacity during the morning, and dreams. Results indicate that 28 subjects expressed a preference for triazolam, 11 for nitrazepam, and 8 expressed no preference. The recorded data showed improvement in every area with two exceptions: dreams and morning concentration capacity were the same for both drugs. 1 reference.

003156 Duizabo, Ph. Hopital Suisse, 10, rue Minard, F-92130 Issy-les-Moulineaux, France **/A new dopaminergic agent in current psychiatric practice./** Un nouvel agent dopaminergique dans la pratique psychiatrique courante. Psychologie Medicale. 12(7):1579-1585, 1980.

The use of amineptine, a new dopaminergic agent, in everyday psychiatric practice was studied. Thirty five patients, suffering from depression, neurosis, and psychosis, were given 200mg of amineptine daily for 3 months. Each subject was examined before treatment, after 15 days, after 1 month, and after 3 months. Results indicate that 90% of the subjects responded positively to the drug. The antidepressant properties of the drug alleviated the signs of depression and improved apathetic or indifferent behavior, allowing social and occupational rehabilitation of the patients. 52 references. (Journal abstract modified)

003157 Fenelli, A.; Pierelli, F.; Koverech, A.; Calvani, M.; Le Pera, G.; Nava, D. Clinica **/Tolerance in a compressed gastroresistant form in psychiatric patients./** Tollerabilita della depamide in compresse gastroresistenti in pazienti psichiatrici. Lavoro Neuropsichiatrico. 64(1/2):67-73, 1979.

The tolerance of a new form of Depamide was studied. A sample of 20 psychiatric patients was administered 300mg of Depamide in a compressed gastroresistant form three times daily (900 to 1800mg per day). Results show that of 20 subjects, only 4 demonstrated gastric intolerance to the drug and abandoned therapy. The remaining subjects did not show any undesirable side-effects. It is concluded that this form of treatment is beneficial for patients in long-term therapy. 12 references. (Author abstract modified)

003158 Fenelli, A.; Pierelli, F.; Koverech, A.; Calvani, M.; Le Pera, G.; Nava, D. Clinica **/Tolerance study in psychiatric patients of a new preparation of sodium dipropylacetate./** Studio sulla tollerabilita in pazienti psichiatrici di una nuova preparazione a base di dipropilacetato di Na. Lavoro Neuropsichiatrico. 64(1/2):75-79, 1979.

The use of a new Form of Depakin (sodium dipropylacetate) in the treatment of psychiatric patients was studied. A sample of 33 subjects was divided into two groups. The first group consisted of 18 subjects who were treated with nongastroresistant Depakin; the second group consisted of 16 subjects who were treated with 200mg of gastroresistant Depakin. Results indicate that the group treated with gastroresistant Depakin demonstrated optimum tolerance in long-term treatment with very few side-effects, particularly in cases of organic pathology. 8 references. (Author abstract modified)

003159 Mann, Martha; Michael, Sandra D.; Svare, Bruce. Svare: Dept. of Psychology, State University of New York, 1400 Washington Ave., Albany, NY 12222 **Ergot drugs suppress plasma prolactin and lactation but not aggression in parturient mice.** Hormones and Behavior. 14(4):319-328, 1980.

The role of pituitary prolactin (PRL) in the maternal aggressive behavior of mice was investigated. It was found that daily administration of pituitary PRL inhibitors (ergocornine hydrogen maleate and 2-bromo-alpha-ergocryptine) to parturient Rockland-Swiss Albino mice suppresses circulating level of PRL and lactation, but fails to alter maternal aggession toward adult male intruders. The results suggest that, contrary to popular speculation, PRL may not be necessary for postpartum aggression in the mouse. They support the view that lactogenic hormones are not involved in mammalian maternal aggression and suggest the need for exploring the possibility that more direct manipulations of neurotransmitters systems via specific agonists and antagonists alter agrression in parturient mice. 26 references. (Author abstrct modified)

003160 no author. no address **FDA clips psychodrug pioneer's IND wings.** Medical World News. 22(4):9-10, 1981.

FDA action taken against Dr. Nathan S. Kline, controversial advocate of chemical answers to mental ills, is reported. Dr. Kline has been barred from using investigational drugs on people. Documents indicate that he used the peptide beta-endorphin before its safety ahd been demonstrated, continued to use clozapine even after being ordered to stop, and did not keep adequate documentation concerning patients he was treating and procedures he was using. Another controversy involving Dr. Kline and his acceptance of a $10,000 Lasker prize is discussed.

003161 Ochs, Hermann R.; Bodem, G.; Greenblatt, D. J. Medizinische Universitatsklinik, D-5300 Bonn-Venusberg, West Germany **Effect of dose on bioavailability of oral digoxin.** European Journal of Clinical Pharmacology. 19(1):53-55, 1981.

The effect of dosage level on bioavailability was examined in nine healthy volunteers who received single .25, .5, 1.0, 1.5, and 2mg doses of oral digoxin tablets in random sequence on five occasions separated by at least 4 weeks. Urinary excretion of immunoassayable digoxin was determined from eight consecutive 24 hr urine samples collected after each dose. Mean values of cumulative urinary excretion of digoxin at the five doses were 40.9%, 35.6%; 36.4%; 34.1%; and 33.5% of the dose ($F=.64$; d.f.$=4.32$; N.S.). Mean values of urinary excretion half-life were 2.48, 2.03, 2.20, 2.07, and 1.87 days ($F=2.87$; d.f.$=4.32$; p.$=.05$). Thus, bioavailability of orally administered digoxin tablets in healthy volunteers is dose dependent over an eightfold range of doses. 9 references. (Author abstract modified)

003162 Roufogalis, Basil D. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, British Columbia, V6T 1W5 Canada **Calmodulin: its role in synaptic transmission.** Trends in NeuroSciences. 3(10):238-241, 1980.

Research leading to the hypothesis that calmodulin can mediate many Ca2 dependent processes in synaptic transmission and plays a role in the interactions between neurotransmitters, Ca2, and cyclic AMP is reviewed, and the mechanisms by which the regulation of calmodulin may control the sequence of events during synaptic activation are examined. It is noted that there is considerable evidence that calmodulin mediates most Ca2 dependent processes and hence, may regulate presynaptic and postsynaptic events. Calmodulin can also regulate the metabolism of cyclic AMP and is itself regulated by cyclic AMP. 11 references. (Author abstract modified)

003163 Silva, Clodomir C.; Campos, Fatima; Carlini, E. A. Depto. de Fisiologia, Centro de Biociencias, Universidade Federal do Rio Grande do Norte (UFRN), Natal, Brazil **Aggressive behavior induced by apomorphine in rats submitted to four stressful situations.** Research Communications in Psychology, Psychiatry and Behavior. 5(4):353-367, 1980.

The aggression inducing property of apomorphine and bodyweight loss were studied in controls and in rats previously submitted to four stressful situations (REM sleep deprivation, cold water swimming, electrical shocks to the paws, and immobilization). Aggressiveness was observed in Ss submitted to REM sleep deprivation or to shock over 2 or 3 day periods. Shorter periods of REM sleep deprivation or foot shocks, as well as swimming or immobilization for 2 to 3 days, failed to facilitate apomorphine side-effects on aggression. There was no relationship between weight loss and the capability of apomorphine to induce aggressive behavior in the stressed rats. 18 references. (Author abstract modified)

003164 Stern, Stephen L. University of Pennsylvania, Philadelphia, PA 19104 **Rapidity of clinical antidepressant response to imipramine. (Unpublished paper).** Final Report, NIMH Grant R01-MH-31870, 1980. 13 p.

A simple test for predicting the daily dosage of imipramine (IMI) that would achieve optimal plasma concentrations of IMI plus its metabolic desipramine (DMI) at steady-state in individual depressed patients was developed and validated. A high correlation was found between 24 hour and steady-state plasma concentrations of IMI and DMI in 20 normal volunteers, who were treated with a 25mg of IMI daily. In a second experiment, nine depressed males were given 50mg of IMI orally, an optimal daily dosage was predicted for each patient to produce a combined plasma level of IMI and DMI of 250ng/ml at steady-state, and the mean combined level was found to be 326ng/ml for seven Ss. Results of this study do not indicate that this procedure was a more accurate predictor than was the 24 hour level. A table for the prediction of a patient's optimal dosage in Experiment 1, based on this correlation and on the assumption that the relationship between dosage and plasma levels in linear for a patient treated with IMI, is given. Suggestions for further research are given. 10 references.

08 DRUG TRIALS IN SCHIZOPHRENIA

003165 Bigelow, Llewellyn B.; Weinberger, Daniel R.; Wyatt, Richard Jed. William A. White Division, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Synergism of combined lithium-neuroleptic therapy: a double-blind, placebo-controlled case study.** American Journal of Psychiatry. 138(1):81-83, 1981.

A longitudinal, placebo controlled case study is described of the response to drug treatment in a 64-year-old female schizoaffective patient hospitalized for 40 years. While neither lithium nor a neuroleptic drug alone was effective, both drugs administered simultaneously led to the gradual extinction of a pronounced behavioral cycle and the disappearance of manifest psychosis. A synergistic interaction between the two drugs is suggested, and the need for sustained trials of the combination therapy in patients with similar behavioral cycles is emphasized. 11 references. (Author abstract modified)

003166 Brown, Walter Armin; Laughren, Thomas. VA Medical Center, Davis Park, Providence, RI 02908 **Low serum prolactin and early relapse following neuroleptic withdrawal.** American Journal of Psychiatry. 138(2):237-239, 1981.

Research evidence is reported from a study of 28 schizophrenic patients over 10 months to demonstrate that those with low serum prolactin concentrations during maintenance neuroleptic treatment relapse earlier than those with higher serum prolactin concentrations. Although the relative bioavailability of neuroleptic would appear a likely explanation, the data do not support this hypothesis. The findings suggest that some patients have a modest prolactin rise at the onset of treatment, show a marked dimunition with continued treatment, and tend to early relapse when neuroleptic is discontinued. Others have a more robust increase at onset, show a less dramatic drop during treatment, and remain clinically stable for a longer period of time after withdrawal. These two groups may have a different neurophysiologic substrate that underlies differences in prolactin regulation and clinical course. 10 references.

003167 Buchsbaum, M. S.; Davis, G. C.; van Kammen, D. P. Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Diagnostic classification and the endorphin hypothesis of schizophrenia: individual differences and psychopharmacological strategies.** In: Baxter, C., Perspectives in schizophrenia research. New York, Raven Press, 1980. 445 p. (p. 177-194).

The endorphin hypothesis of schizophrenia is reviewed as a case history of research, as a target for psychophysiological and neuropharmacologic approaches, and as a potentially viable but limited factor in mental dysfunction. Direct evidence for the endorphin hypothesis, indirect evidence (pain sensitivity, electrophysiological measures of sensory sensitivity, and opiate antagonists and evoked potential amplitude) for a role of endorphins in schizophrenia, and specificity of pain insensitivity findings for schizophrenia are discussed, and new strategies for identifying subgroups of schizophrenic patients are considered. The discussion that followed the presentation of the paper at a symposium on strategies for future research in schizophrenia is given. 62 references.

003168 Carman, John Scott; Bigelow, Llewellyn B.; Wyatt, Richard Jed. Dept. of Psychiatry, University Hospital, Birmingham, AL 35294 **Lithium combined with neuroleptics in chronic schizophrenic and schizoaffective patients.** Journal of Clinical Psychiatry. 42(3):124-128, 1981.

In a placebo controlled double-blind cross-over study, lithium carbonate was added to the neuroleptic treatment of 11 chronic schizophrenic and seven schizoaffective inpatients. Nurses' ratings of behavior indicate significant improvement in eight patients in agitation or manic behavior, five patients in psychosis, and five patients in depression. A greater initial severity of symptoms, presence of affective symptoms, and episodic course characterized the favorable response group. No neurotoxicity was encountered in this study. 26 references. (Author abstract)

003169 DeLisi, L. E.; Wise, C. D.; Bridge, T. P.; Rosenblatt, J. E.; Wagner, R. L.; Morihisa, J.; Karson, C.; Potkin, S. G.; Wyatt, R. J. Adult Psychiatry Branch, Division of Special Mental Health Research, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **A probable neuroleptic effect on platelet monoamine oxidase in chronic schizophrenic patients.** Psychiatry Research. 4(1):95-107, 1981.

Platelet monoamine oxidase activity (MAO) was studied serially over time in 16 chronic schizophrenic patients when medication free and then when medicated. Thirteen of the 16 patients had significant decreases in platelet MAO activity following neuroleptic drug treatment. The change in MAO activity was found to be correlated with response to treatment and to dose of medication. Results are discussed in terms of previous research. 56 references. (Author abstract modified)

003170 Erban, L.; Prokes, J.; Richtrova, E. Research Institute of Psychiatry, CS-181 03 Praha 8, Czechoslovakia **Plasma level**

of cyclic AMP and mental diseases. Activitas Nervosa Superior. 22(4):269-273, 1980.

Plasma cyclic AMP levels of schizophrenic Ss and normal control Ss were monitored and compared. In the first phase, 12 patients without active therapy were compared to a control group of 16 hospital employees who ate the same food as the patients. In the second phase cyclic AMP was determined in eight patients before and after 2 weeks and 4 weeks of chlorpromazine therapy. In the third phase, 14 patients still on medication were compared with 14 control Ss. It is concluded that cyclic AMP levels are a measure of the unspecific reaction of the patient's motor activity. It is noted that the elevated plasma cyclic AMP levels in schizophrenic Ss after discontinuation of neuroleptic therapy agrees with similar findings of urinary cyclic AMP in the manic phase of manic-depressive patients. 39 references.

003171 Freeman, Hugh L. Hope Hospital, Eccles Old Road, Salford M6 8HD, England **Long-term treatment of schizophrenia.** Comprehensive Psychiatry. 22(1):94-102, 1981.

Issues in the long-term treatment of schizophrenia are examined from a biopsychosocial perspective. Results of an English study of 190 chronic schizophrenics suggest that interaction between drug side-effects, environmental stimuli, and psychophysiological sensitivity may contribute to relapse in deinstitutionalized patients, despite maintenance of apparently adequate levels of medication. The role of neuroleptics in long-term treatment is then considered in terms of their influence on patterns of service delivery, their efficacy in preventing acute relapses, and their impact on the overall prognosis of schizophrenia. Considerable evidence is now available which indicates that the prognosis of schizophrenia can be considerably improved by neuroleptic maintenance therapy, particularly with the new depot drugs. However, in view of the importance influence of the family environment and the service network on long-term maintenance, medical efforts must be related to social and occupational rehabilitation, applied with skill and care in an integrated and comprehensive fashion. 20 references.

003172 Gamburg, A. L.; Aranovich, A. G.; Kotel'kevich, Yu. N.; Omorokov, B. M.; Rasnyuk, V. A.; Severinova, N. P. Kafedra psikhiatrii Saratovskogo meditsinskogo instituta, Saratov, USSR **/Treatment of therapeutically resistant paranoid schizophrenic patients with fluphenazine depot combined with other psychotropic drugs and clozapine./** Lecheniye moditenom-depo s drugimi psikhotropnymi sredstvami i leponeksom terapevticheski rezistentnykh bol'nykh paranoidnoy shizofreniyey. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(8):1211-1216, 1980.

The treatment of therapeutically resistant paranoid schizophrenic patients with fluphenazine depot, with other psychotropic drugs and with clozapine was instituted in 251 patients (78 women and 173 men ranging in age from 16 to 50 years). The results of treatment with these drugs were compared. Findings indicate that a comprehensive treatment may be applied successfully to some paranoid schizophrenics resistant to fluphenazine depot and other neuroleptic drugs or their combinations. Comprehensive treatment appears to be more effective in cases of systematized delusions, psychic automatism syndromes, and in crude emotional volitional defect. Treatment with clozapine is more efficacious in emotionally saturated nonsystematized delusions, pronounced disordered behavior, and mild manifestations of deterioration. 18 references. (Journal abstract modified)

003173 Giannelli, A.; Vallillo, R. Servizi Psichiatrici Provinciali, Bergamo, Italy **/Considerations on long-acting chemotherapy: an experience with fluphenazine decanoate./** Osservazioni in tema di chemio-terapia long-acting: a proposito di una esperienza con flufenazina decanoato. Rivista Sperimentale di Freniatria. 103(1):164-174, 1979.

The important aspects of long-lasting neuroleptics were analyzed in 86 schizophrenic patients (42 women and 44 men) who were treated with depot fluphenazine. In 67 cases, the disease had been present for longer than 5 years. The subjects were administered 25mg of fluphenazine each for 21 days for 3 months to 3 years. Results indicate that while treated with the fluphenazine, 38 subjects demonstrated improvement, 24 showed moderate improvement, and 17 showed mediocre improvement. Some side-effects were discovered, including: sleep disturbances, indifference, anxiety, sadness, and depressive tendencies. It is concluded that depot fluphenazine not only causes clinical improvement but also contributes favorably to the doctor-patient relationship. 19 references. (Journal abstract modified)

003174 Gruzelier, John; Connolly, John; Eves, Frank; Hirsch, Steven; Zaki, Saniha; Weller, Malcolm; Yorkston, Neil. Psychiatry Dept., Charing Cross Hospital Medical School, Fulham Palace Road, London W6 8RP, England **Effect of propranolol and phenothiazines on electrodermal orienting and habituation in schizophrenia.** Psychological Medicine. 11(1):93-108, 1981.

The influence of propranolol and phenothiazines on bilateral electrodermal orienting responses to repeated auditory stimuli was studied with schizophrenic patients and controls. In three studies phasic activity to moderate intensity sounds of patients on no drugs or phenothiazines was predominantly hyperresponsive or hyporesponsive. Controls showed moderate or slow habituation. Propranolol was found to facilitate habituation in slow habituators and to reinstate responses in half of nonresponders, especially when given as the sole drug. The effects seldom had a counterpart in changes in nonspecific responses or levels of skin conductance. It is suggested that modulatory influences on stimulus and response processing and on lateral asymmetries in responses may underlie propranolol's efficacy in treating schizophrenia. 70 references. (Author abstract modified)

003175 Henry, Jean-Francois; Cuche, Henri; Gisselmann, Andre; Zarifian, Edouard; Loo, Henri; Morselli, Paolo L. Dept. de Recherche Clinique, Systeme Nerveux Central, Lers-Synthelabo, 58, rue de la Galciere, F-75013 Paris, France **/GABA and schizophrenia: study of the action of a GABAergic antagonist. Progabide or SL-76002./** GABA et schizophrenie: etude de l'action d'un agoniste GABAergique. Le progabide ou SL 76002. Psychologie Medicale. 12(11):2421-2426, 1980.

The use of progabide or SL-76002 in the treatment of schizophrenia was studied in two open clinical trials. In the first trial, the drug was administered alone to 16 schizophrenic patients (five paranoids, nine hebephrenics, one simple, and one catatonic) for a period of 19 to 60 days at 1800mg/day to 2400mg/day. In the second trial, a group of 10 schizophrenic patients (seven paranoids and three hebephrenics) was administered 1500mg/day to 2200mg/day of the drug in addition to preexisting neuroleptic therapy. Results indicate that the SL-76002 was without therapeutic or antipsychotic effect. Except for sedative effects, the clinical tolerance was good. The results do not support the concept that an increase in GABA activity may be useful in schizophrenia. 17 references. (Journal abstract modified)

003176 Ignatov, S. A.; Burbayeva, G. Sh.; Tsutsul'kovskaya, M. Ya.; Abramova, L. I.; Trubnikov, V. I. Institut psikhiatrii, AMN SSSR, Moskva, USSR **/Beta-endorphin levels in the cerebrospinal fluid of schizophrenics./** Soderzhaniye beta-endorfina v likvore bol'nykh shizofreniyey. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(9):1331-1337, 1980.

Beta-endorphin levels were studied in the cerebrospinal fluid (CSF) of 24 male schizophrenics and a control group of 15 patients with neurological disorders without the disease syndrome. The Ss included patients with pronounced symptoms of juvenile deteriorating (nuclear) schizophrenia and various forms of juvenile paranoid and attack like progressive schizophrenia, which have a similar course. The Ss were undergoing treatment with psychotropic drugs. During treatment the beta-endorphin levels in the CSF were determined by radioimmune analysis. Treatment was discontinued for 10 days, and the beta-endorphin levels were determined again. Results show a correlation between changes in the beta-endorphin level in the CSF and the patients' clinical state. Reduction in the beta-endorphin level correlates with intensification of hallucinatory/delusional disorders. 26 references. (Journal abstract modified)

003177 Iovchuk, N. M. Pervoye Klinicheskoye otdeleniye Instituta psikhiatrii AMN SSSR, Moskva, USSR /**Late results of lithium treatment of adolescents with attack like schizophrenia.**/ Otdalennyye rezul'taty terapii litiyem podrostkov, bol'nykh pristupoobraznoy schizofreniyey. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(10):1546-1548, 1980.

Lithium treatment of schizophrenia among children and adolescents was studied in 62 patients (aged 7 to 16 at the beginning of a 9 year period of observation). Lithium therapy was highly effective for 37 of the patients and ineffective for only 12 patients. The group which showed good results had suffered from pronounced affective attacks without a tendency toward protracted unipolar development. In this group, lithium treatment over a long period led to significant reduction in the frequency, length, and severity of attacks, and in some cases to complete disappearance of productive symptoms. The group which showed poor results had suffered from chronic depressive states during puberty and from phased atypical affective disorders leading to an expressed schizophrenic defect. It is concluded that patients whose illness follows this type of course should not be treated with lithium. 8 references. (Journal abstract modified)

003178 Judd, Lewis L.; Janowsky, David S.; Segal, David S.; Parker, Donal C.; Huey, Leighton Y. Dept. of Psychiatry (M-003), University of California at San Diego, La Jolla, CA 92093 **Behavioral effects of methadone in schizophrenic patients.** American Journal of Psychiatry. 138(2)243-245, 1981.

Initial data are reported from a placebo controlled double-blind investigation of the effects of methadone on the behavior of six schizophrenic patients. No significant baseline differences were noted between methadone and placebo days. Methadone produced a small but definite motor slowing and promoted lethargy, deactivation, and loss of function. Negative schizophrenic symptomatology (emotional withdrawal, motor retardation, and blunted affect) increased after methadone administration. An increase in prolactin was noted, probably due to the mediation by the brain of opiate receptors that inhibit dopamine release from the tuberoinfundibular dopaminergic neurons. The data also suggest that methadone hydrochloride does not exert a specific antipsychotic effect in schizophrenic patients but instead accentuates emotional withdrawal and decreases motor activity. 12 references.

003179 Kawahara, Ryuzo; Hazama, Hidebumi; Fukuhara, Tomokazu; Takeshita, Hisayoshi. Dept. of Neuro-psychiatry, Tottori University School of Medicine, Yonago 683, Japan **Biological effects of chlorpromazine in chronic schizophrenics. III. The mutual relation of each index.** Kyushu Neuro-Psychiatry. 26(1):127-134, 1980.

The correlations among physiological and neurochemical indicators were studied in connection with the effects of chlorpromazine on chronic schizophrenics. Ss were 11 schizophrenics, 8 normal chlorpromazine cases, and 5 normal physiological saline cases. The blood prolactin secretion accelerated after chlorpromazine injection and responded to chlorpromazine with shorter latency than that of growth hormone. In schizophrenics, both the appearance percentage of total sleeping time and the systolic blood pressure showed significant correlations with growth hormone secretion after chlorpromazine injection, schizophrenics' systolic blood pressure after chlorpromazine injection showed a paradoxical response as compared to the normal chlorpromazine group; and schizophrenics' heartrate and finger plethysmographic responses to chlorpromazine were almost the same as those of the normal chlorpormazine group. On the basis of the results, the etiology of schizophrenics is discussed in terms of dopaminergic neuronal hypersensitivity, serotoninergic neuronal hyperactivity, and also the vulnerability of the hypothalamus. 28 references. (Author abstract modified)

003180 Kinney, Michael J.; Varga, Ervin; Varga, Vera; Tarter, Ralph; Sugerman, A. Arthur; Nilsen, Stephanie; Gupta, Giriwarlal. Suite 909, 1st Huntington Building, Huntington, WV 25701 **Hemoperfusion for chronic schizophrenia: preliminary psychiatric results.** Journal of Clinical Psychiatry. 42(2):175-178, 1981.

Six patients with chronic schizophrenia unresponsive to accepted therapy were assigned randomly to receive as adjunctive therapy either weekly coated charcoal hemoperfusion (CCHP) or sham hemoperfusion (Sham HP) in a double-blind study using two independent psychiatric raters. Four weeks of treatment suggested that: 1) CCHP was associated with significant improvement in some psychiatric measures; 2) improvement was early in the treatment course; and 3) neither CCHP nor Sham HP was associated with deterioration in any of the psychiatric measures. When one patient from each group was crossed-over to receive the opposite treatment these conclusions were supported. It is concluded that further studies are warranted. 21 references. (Author abstract)

003181 Kurland, Albert A.; Nagaraju, Arramraju. Maryland Psychiatric Research Center, Institute of Psychiatry, School of Medicine, University of Maryland, Baltimore, MD 21201 **Viloxazine and the depressed schizophrenic -- methodological issues.** Journal of Clinical Pharmacology. 21(1):37-41, 1981.

Schizophrenic patients with depressive symptoms were treated with viloxazine or placebo combined with chlorpromazine or haloperidol. No difference between viloxazine and placebo treated groups was found. Since no side-effects were associated with viloxazine, it is possible the doses used were inadequate. 30 references. (Author abstract modified)

003182 Kurland, Albert A.; Nagaraju, Arramraju; Hanlon, Thomas E.; Wilkinson, Edwina H.; Ng, Kung-Tat. Maryland Psychiatric Research Center, Dept. of Psychiatry, School of Medicine, University of Maryland, Baltimore, MD 21201 **A comparison of dopamine receptor blocking assay with plasma drug levels of haloperidol in schizophrenic patients.** Journal of Clinical Pharmacology. 21(1):42-47, 1981.

Biological and chemical assays were used to study plasma neuroleptic levels in seven schizophrenic patients on a fixed dose of haloperidol (20mg/day). Results of the dopamine receptor blocking assay (DRBA) were highly correlated with those obtained by gas chromatography/mass spectrometry. It is suggested that the DRBA could be used to monitor drug compliance, adjust dosage, and evaluate the effects of combined drug treatments. 15 references. (Author abstract modified)

003183 Lindberg, Dick. Dept. II, Lillhagen Hospital, Hisings Backa, Sweden **Management of schizophrenia: long-term clinical studies with special reference to the combination of psychotherapy and depot neuroleptics.** Acta Psychiatrica Scandinavica. 63(Suppl. 289):1-112, 1981.

Results after long-term treatment of schizophrenia were examined with emphasis on the combination of psychotherapy, including other psychosocial treatments, and continuous depot neuroleptic medication, and on building a treatment model for the rehabilitation of schizophrenics. A first sample of younger, male, chronic schizophrenics treated for 5 years with a combination of intensive psychotherapy and depot neuroleptics was significantly changed in a direction indicative of improvement as measured by the Holtzman and Rorschach tests, and is compared with a control group treated with neuroleptics only. A second sample treated with either fluphenazine decanoate or pipothiazine palmitate and studied for 3 years was found to have maintained a low degree of symptoms and signs. A third sample treated according to an integrated treatment model also showed a low level of signs and symptoms. It is noted, however, that although the level of psychopathology was low, difficulties in coping with emotional and practical problems in social life were observed. 158 references. (Author abstract modified)

003184 Luchins, D. J.; Gillin, J. C.; Wagner, R. L.; DeLisi, L. E.; Morihisa, J. M.; Weinberger, D. R.; Bigelow, L. B.; Klein, S. T.; Wyatt, R. J. Adult Psychiatry Branch, Div. of Special Mental Health Research, NIMH, Saint Elizabeths Hospital, Washington, DC **Piperidone in chronic schizophrenic patients: a controlled double-blind study.** Biological Psychiatry. 16(1):91-95, 1981.

In a controlled double-blind study, the effects of piperidine were investigated in five male (one of whom failed to complete the study) and one female schizophrenia inpatients. Ss were started on a 300mg/day dose, increased over 2 weeks to 1600 to 1800mg/day and held constant for 1 month, then increased to 3000 to 3200mg/day and held constant for 1 month. A 3 week placebo period preceded and followed the experimental protocol. No significant drug effect was found to Brief Psychiatric Rating Scale total score or for the six symptom clusters of thought disorder, withdrawal, hostility/suspiciousness, anxiety, depression, or activation for the group or for any patient. No hematological or biochemical changes were associated with the drug period. The only side-effects were nausea and vomiting in one patient and nausea in another at the 3200mg dose; both effects subsided when the dose was reduced. 14 references.

003185 Madruga, Wanderlei Saraiva; Noguiera, Alexandre Barbosa; Costa-e-Castro, Marcelo. Rua Petit Carneiro, 768, 80000 Curitiba, Brazil **/Neuroleptics administered in high dosages./** Neurolepticos em altas doses. Jornal Brasileiro de Psiquiatria. 29(2):99-102, 1980.

The administration of neuroleptics in high dosages to schizophrenic patients is discussed. High doses of these types of drugs represent an alternative for the treatment of chronic schizophrenics resistant to conventional therapeutic measures. The most frequent side-effects experienced with high doses are lethargy and sleepiness; extrapyramidal effects are more frequent with conventional doses. Although high doses have not been found to be superior to the conventional doses until now, it is known that haloperiodol in high doses is efficient in the management of psychomotor agitation. 14 references. (Journal abstract modified)

003186 Manos, Nikolas; Gkiouzepas, John; Logothetis, John. Karolou Diehl 20, Thessaloniki, Greece **The need for continuous use of antiparkinsonian medication with chronic schizophrenic patients receiving long-term neuroleptic therapy.** American Journal of Psychiatry. 138(2):184-188, 1981.

A group of 98 chronic schizophrenic patients receiving long-term neuroleptic treatment and trihexyphenidyl were switched to either placebo or study trihexyphenidyl in a double-blind 6 week study. Fifty one (68%) of the 75 Ss given placebo versus one of 23 Ss who continued on active trihexyphenidyl developed severe worsening of extrapyramidal signs, necessitating early termination. Twenty one (28%) of the placebo versus two (8.7%) of the trihexypenidyl Ss developed less severe worsening. Furthermore, 50 (66.6%) of the placebo patients, but only two (8.7%) of the trihexyphenidyl Ss had psychotic or other severe physical symptoms related to withdrawal of prestudy antiparkinsonian medication. These data support the need for continuous use of antiparkinsonian medication in the long-term neuroleptic therapy of chronic schizophrenic patients. 20 references. (Author abstract modified)

003187 Matsukura, S.; Yoshimi, H.; Sueoka, S.; Chihara, K.; Fujita, T.; Tanimoto, K. Third Division, Dept. of Medicine, Kobe University School of Medicine, Ikuta-ku, Kobe 650, Japan **Beta-endorphin in Cotard's syndrome.** Lancet. No. 8212:162-163, 1981.

Radioimmunoassays of beta-endorphin and other hormones were conducted in a 41-year-old patient with chronic schizophrenia and Cotard's syndrome. Tests conducted 1 week after withdrawal of neuroleptic medication indicated normal beta-endorphin levels in blood and CSF, similar to those reported for chronic schizophrenics. This suggests that beta-endorphin plays a minor role in schizophrenia and also in analgesia in Cotard's syndrome. Following intravenous administration of 10mg naloxone, no significant changes in hormone levels or in the perception of painful stimuli were observed. On the other hand, naloxone has been reported to increase adrenocorticotropic hormone, luteinizing hormone, and follicle stimulating hormone (without effect on growth hormone, prolactin, or thyroid stimulating hormone) in normal Ss, and has restored pain sensation in congenital insensitivity to pain. 11 references.

003188 May, Philip R. A.; Van Putten, Theodore; Jenden, Donald J.; Yale, Coralee; Dixon, W. J. V.A. Medical Center, Wilshire and Sawtelle Boulevards, Los Angeles, CA 90073 **Chlorpromazine levels and the outcome of treatment in schizophrenic patients.** Archives of General Psychiatry. 38(2):202-207, 1981.

Plasma and saliva levels of chlorpromazine hydrochloride were measured by gas chromatographymass spectrometry, after a standard dosage had been administered to 48 newly admitted schizophrenics over 28 days. Other treatments were rigorously controlled. Saliva chlorpromazine concentrations were higher than plasma concentrations, generally by about four to 50 times. Saliva and plasma chlorpromazine levels were significantly related. There was great variability in individuals between plasma and saliva peaks and values over time, in plasma/saliva ratios, and in change in plasma/saliva ratio over time. chlorpromazine plasma and saliva levels at the end of fixed, sustained dosage treatment did not correlate with amount of improvement as measured by 10 criteria from the Brief Psychiatric Rating Scale and the Mobility, Affects Cooperation, and Communication Scale. Yet, levels obtained in the first 24 hours after the first dose did seem related to outcome, more strongly for saliva chlorpromazine than for plasma chlorpromazine levels. A reexamination of the relationships between levels of antipsychotic drugs in the body and treatment effect is recommended. 32 references. (Author abstract)

003189 May, Philip R. A.; Van Putten, Theodore; Jenden, Donald J.; Yale, Coralee; Dixon, Wilfrid J.; Goldstein, Michael J. V.A. Medical Center Brentwood, 11301 Wilshire Boulevard, Los Angeles, CA 90073 **Prognosis in schizophrenia: individual differences in psychological response to a test dose of antipsychotic drug and their relationship to blood and saliva levels and treatment outcome.** Comprehensive Psychiatry. 22(2):147-152, 1981.

Plasma and saliva chlorpromazine (CPZ) concentrations and their relationships to psychometric change following a single test dose of this antipsychotic drug were studied in a sample of newly admitted schizophrenic patients. There were great individual differences in psychological response: in some, performance was improved; in others, it was reduced. In general, psychometric change followed CPZ plasma levels, but with a definite time lag, and the relationship was neither simple nor direct. There was no significant relationship between test dose performance and the eventual outcome of a course of drug treatment. These observations imply that it is unlikley that there is a simple relationship between therapeutic change and plasma levels. On the basis of results, it is concluded that the most fruitful predictors of therapeutic outcome may be early plasma and saliva levels of drug, early clinical response, and the patient's subjective response to the drug effect. 17 references. (Author abstract modified)

003190 Meltzer, Herbert Y.; Busch, Daniel; So, Rebecca; Holcomb, Henry; Fang, Victor S. Dept. of Psychiatry, University of Chicago Pritzker School of Medicine, Chicago, IL 60637 **Neuroleptic-induced elevations in serum prolactin levels: etiology and significance.** In: Baxter, C., Perspectives in schizophrenia research. New York, Raven Press, 1980. 445 p. (p. 149-176).

A series of studies concerning the correlation between serum prolactin levels and clinical improvement in schizophrenic patients after several weeks of neuroleptic treatment is reviewed: specifically, the focus is on what can be learned from pituitary hormone secretion, and on studies related to prolactin and growth hormone secretion. A negative correlation was found between serum prolactin response to a single intramuscular injection of chlorpromazine and clinical response after 1 week of treatment: a possible explanation for this result is proposed which, if correct, would indicate this may be a useful method to identify patients with dopamine (DA) dependent psychoses. Some preclinical endocrine research which sheds new light on the mechanism of action of various psychotropic drugs, including sulpiride, metoclopramide, and LSD, is discussed. It is demonstrated that atypical antipsychotic drugs such as sulpiride and metoclopramide may stimulate prolactin release by a novel mechanism. LSD has been shown to have potent DA-like action at the pituitary, an additional indication that its effects on DA may underlie its psychotomimetic effects. The discussion that followed the presentation of the paper at a symposium on strategies for future research in schizophrenia is given. 111 references.

003191 Muller, E. Universitats-Nervenklinik mit Poliklinik, Erlangen, West Germany **/Diagnosis and treatment of acute schizophrenic psychoses./** Diagnose und Behandlung akuter schizophrener Psychosen. Neurologie und Psychiatrie fur die Praxis. 5:89-91, 1979.

Examples of the onset and symptoms of acute schizophrenic psychoses of various types are presented, and their diagnosis and treatment are discussed. Central emphasis is placed on the danger of the patient's hurting himself or others during paranoid hallucinatory states. The necessity of immediate hospitalization is emphasized, even if it is against the will of the patient or his family. A wide spectrum of manic experiences leading to stupor is illustrated. Therapy with neuroleptics is discussed. (Journal abstract modified)

003192 Okasha, A. Dept. Psychiatrique, Universite Air Shams, Cairo, Egypt **/Carpipramine: a disinhibitory drug compound in chronic schizophrenia./** La carpipramine: un compose desinhibiteur dans la schizophrenie chronique. Encephale. 6(2):161-166, 1980.

The use of carpipramine in the treatment of chronic schizophrenics was investigated. Carpipramine was administered orally to 50 subjects in a dosage of 50mg twice daily. The Brief Psychiatric Rating Scale was administered before treatment, after 1 week, 3 weeks and 6 weeks to assess target symptoms. Results indicate that the drug demonstrated a disinhibitory and stimulating effect, with global improvement seen in 70% of the cases; 20% showed no change, and 10% deteriorated owing to exacerbation of psychosis and hyperactivity. Carpipramine was effective in emotional withdrawal, motor retardation, and blunted affect. Residual and pseudoneurotic forms of the illness demonstrated the best response to the drug; onset of response started within 8 to 14 days. The general tolerance, especially compared with last treatment received, was fair. 8 references. (Journal abstract modified)

003193 Petho, B.; Graf, L.; Karczag, I.; Bitter, I.; Tolna, J.; Baraczka, K.; Li, Choh Hao. Dept. of Psychiatry, Semmelweis Medical University, H-1038 Budapest, Hungary **Beta-endorphin and schizophrenia.** Lancet. No. 8213:212-213, 1981.

Studies are reported on the beta endorphin treatment of six acute schizophrenic patients in a double-blind design. It was found that beta endorphin affects the temperament, rather than the process symptoms of such patients, and that the results and duration of temperament therapy depends on the nature and symptoms of the psychosis. This interpretation may help resolve discrepancies between other clinical studies. The manner of drug administration may also affect clinical results. 9 references.

003194 Sabbatini, Franco; Lorenzini, R.; Maregha, M. G.; Faore, E. Largo Millefonti, 35, I-10126 Torino, Italy **/The use of a morphine antagonist (naloxone) in the treatment of dissociative syndromes./** L'impiego di un antagonista morfinico (naloxone) nel trattamento di sindromi dissociative. Rivista Internazionale di Psicologia e Ipnosi. 20(1):127-131, 1979.

The use of naloxone, a morphine antagonist, in the treatment of dissociative syndromes was studied. Four female patients suffering from dissociative syndromes were administered 0.6mg naloxone the first day and placebo the next 4 days; for 4 more days half the sample received 0.4 naloxone, and the other half received a placebo. Results do not indicate any significant improvement in any of the patients; no difference between naloxone and the placebo was found. 17 references. (Journal abstract modified)

003195 Schooler, Nina R. Psychopharmacology Research Branch, NIMH, Rockville, MD 20857 **Placebo effect: from control to experimental condition.** In: Baxter, C., Perspectives in schizophrenia research. New York, Raven Press, 1980. 445 p. (p. 389-399).

Methodological issues raised about the design of placebo studies, which need to be addressed if the studies are to be useful, are examined. Several examples are given to suggest that the administration of inert substances can provide information about the biological state of individuals being studied. It is suggested that the understanding of both the positive and negative effects of drugs used in the treatment of schizophrenia makes studies which use placebo treatments innovatively both clinically and ethically appropriate. The discussion that followed the presentation of the paper at a symposium on strategies for future research in schizophrenia is given. 24 references.

003196 Shalif, Ilan; Lerner, Yakov; Dasberg, Haim. Dasberg: Jerusalem Mental Health Center, Ezrath Nashim, POB 140, Jerusalem, Israel **A symptom profile analysis of antipsychotic drug treatment: nonparametric multidimensional technique.** Psychiatry Research. 4(1):1-12, 1981.

Thirty six schizoaffective patients were treated with haloperidol plus lithium or haloperidol plus placebo. Standard statistical analysis showed greater improvement in those treated with lithium plus haloperidol. The Brief Psychiatric Rating Scale scores were reanalyzed using a nonparametric technique for multidimensional scaling of symptom profiles. The differential outcome after haloperidol with or without added lithium was found to be determined both by symptom dimension and by type of drug. Results show added lithium prevents a depressive shift after haloperidol treatment on the dimension of cognitive disorganization/depressive preoccupation. 11 references. (Author abstract)

003197 Snyder, Solomon H. Dept. of Pharmacology, Johns Hopkins University School of Medicine, 725 N. Wolfe St., Baltimore, MD 21205 **Dopamine receptors, neuroleptics, and schizophrenia.** American Journal of Psychiatry. 138(4):460-464, 1981.

Evidence is presented that the antipsychotic effects of neuroleptic drugs are mediated by dopamine DA-2 receptors and that dopamine DA-1 receptors, linked to cyclic AMP formation, are not involved. Dopamine receptor binding is enhanced in brain specimens of deceased schizophrenic patients, an increase which may relate to chronic neuroleptic treatment. The binding of 3H-butyrophenones to dopamine receptors can be used for a radioreceptor assay that detects blood levels of all clinically used neuroleptics and their pharmacologically active metabolites and may facilitate routine monitoring of blood levels. 31 references. (Author abstract modified)

003198 Tamminga, Carol A.; Tighe, Patti J.; Chase, Thomas N.; DeFraites, E. Gerard; Schaffer, Martin H. Maryland Psychiatric Research Center, PO Box 3235, Baltimore, MD 21228 **Destyrosine-gamma-endorphin administration in chronic schizophrenics: a preliminary report.** Archives of General Psychiatry. 38(2):167-168, 1981.

The beta-lipotrophin fragment, des-tyrosine-gamma-endorphin (DTgammaE), which has been reported to have antipsychotic properties, was administered without other psychoactive drugs to a subpopulation of five schizophrenic Ss (three paranoid, two undifferentiated). Male patients with chronic psychotic illness and previous long-term neuroleptic therapy were given DTgammaE at a dose and duration of treatment that have been reported to be effective. No improvement in psychotic symptoms occurred; plasma prolactin level, a parameter characteristically altered by neuroleptic treatment, did not change. The beneficial effects of DTgammaE in schizophrenia may be specific to a diagnostic category, may be dependent on past pharmacological treatment, or may only occur in combination with other drugs. 9 references. (Author abstract modified)

003199 Tune, Larry E.; Creese, Ian; DePaulo, J. Raymond; Slavney, Phillip R.; Snyder, Solomon H. Snyder: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Neuroleptic serum levels measured by radioreceptor assay and clinical response in schizophrenic patients.** Journal of Nervous and Mental Disease. 169(1):60-63, 1981.

Serum neuroleptic levels and clinical response were compared serially in 10 schizophrenic patients treated with a variety of neuroleptics using a novel radioreceptor assay for neuroleptics. In this assay the drug in serum competes with (3H)spiroperidol for binding to dopamine receptors on membranes of the caudate nucleus. Serum neuroleptic levels, expressed in terms of dopamine receptor occupancy, were similar for most neuroleptics at therapeutic doses. Thioridazine levels were substantially higher than those of other neuroleptics. 24 references. (Author abstract)

003200 Van Praag, H. M.; Verhoeven, W. M. A. Dept. of Psychiatry, University of Utrecht, Utrecht, The Netherlands **Endorphin research in schizophrenic psychoses.** Comprehensive Psychiatry. 22(2):135-146, 1981.

Following a review of the discovery of endorphins and the rationale behind the interest in endorphins in psychiatry, major areas of endorphin research in patients with schizophrenic psychoses are delineated. Reviewed are studies of: 1) endorphins in CSF and dialysate; 2) therapeutic use of opiate (endorphin) antagonists; 3) therapeutic use of endorphins and their derivatives, including studies of beta-endorphin, destyrosine-gamma-endorphin, and FK 33-824, a synthetic met-enkephalin derivative. While the results of such studies have been equivocal, the clinical material is yet too small to warrant definite conclusions. However, therapeutic effects have been reported for these compounds. The most promising findings have been reported for destyrosine-gamma-endorphin, a natural endorphin which lacks morphinomimetic properties and has a number of clinical and pharmacological characteristics in common with the traditional neuroleptics. 46 references.

003201 van Putten, Theodore; May, Philip R. A.; Jenden, Donald J. V.A. Medical Center, Brentwood, CA **Plasma levels of chlorpromazine and clinical response.** Psychopharmacology Bulletin. 17(1):113-115, 1981.

The relationship between plasma levels of chlorpromazine (CPZ) and clinical response was investigated among 34 newly admitted schizophrenic patients treated with 6.6mg/kg CPZ for 28 days. At the end of the fixed dose period, clinical responders had the same plasma levels as nonresponders. This suggests that lack of response is primarily a matter of the illness's sensitivity to CPZ, not to a plasma level below some therapeutic window. Three of the responders had plasma levels greater than 300 picromoles; even though their psychosis responded, all three either appeared overmedicated or complained of side-effects. 1 reference. (Author abstract modified)

003202 Van Putten, Theodore; May, Philip R. A.; Marder, Stephen R.; Wittmann, Lorraine A. V.A. Medical Center, Wilshire and Sawtelle Boulevards, Brentwood, Los Angeles, CA 90073 **Subjective response to antipsychotic drugs.** Archives of General Psychiatry. 38(2):187-190, 1981.

Newly admitted schizophrenic patients (n=63) were given a test dose of thiothixene and their subjective response was recorded by a technician blind to clinical ratings. All patients were then treated with thiothixene in an active milieu setting. Patients varied widely in their subjective responses. An initial dysphoric response was a powerful predictor of both immediate and eventual drug refusal. Before treatment, dysphoric responders tended to be less symptomatic and did significantly better on the Continuous Performance Test. Dysphoric responders experienced significantly more extrapyramidal symptoms following the test dose. Some dysphoric responders did have a good outcome when treated with very low doses. It is recommended that patients with a history of dysphoric response be given a very low dose initially. 17 references. (Author abstract)

003203 Verhoeven, W. M. A.; Van Praag, H. M. Hopital Universitaire, Dept. de Psychiatrie, Nicolaas Beetsstraat 24, Utrecht, The Netherlands **/Endorphins in mental illnesses, and particularly in schizophrenia./** Les endorphines dans les maladies

mentales, en particulier dans la schizophrenie. Encephale. 6(2):103-113, 1980.

The results of clinical studies with naloxone, beta-endorphin, the synthetic met-enkephalin analogue FK-33-824, and des tyrosine-gamma-endorphin in schizophrenia and other mental illnesses are discussed. The clinical results of treatment of schizophrenia with des tyrosine-gamma-endorphin present the greatest scientific interest. This endogenous neuropeptide, apparently occurring naturally in the brain, has pharmacologic properties similar to those of conventional neuroleptics such as the phenothiazines and butyrophenones. It is thus conceivable that des tyrosine-gamma-endorphin may be an endogenous antipsychotic agent and that its deficiency may contribute to the pathogenesis of certain types of schizophrenia. 42 references. (Journal abstract modified)

003204 Welbel, Leszek. Instytut Psychoneurologiczny Al. Sobieskiego 1/9, 02-957 Warszawa, Poland **/Differences in the clinical action of some neuroleptic drugs./** Roznice w dzialaniu klinicznym niektorych neuroleptykow. Psychiatria Polska. 14(2):113-118, 1980.

The effectiveness and clinical properties of six neuroleptics were studied using 118 male and 117 female schizophrenic patients from five psychiatric hospitals. The changes in their mental condition were evaluated by using the Brief Psychiatric Rating Scale. It was found that in cases of chronic schizophrenia the condition of at least 70% of the patients improved substantially. The best results were obtained by using chlorpromazine, methotrimethrazine, trifluoperazine, and clozapine. Differences between the neuroleptics in terms of strength were statistically insignificant. These drugs were found to be somewhat more effective than pimozide and sulpiride. Chlorpromazine and clozapine are more effective in cases of motor disorders and psychosis. Pimozide and sulpiride are indicated for patients suffering from motor disorders accompanied by axial schizophrenic symptoms. Methotrimeprazine is most effective in patients suffering from restlessness accompanied by depression. It is concluded that trifluoperazine has the most balanced clinical profile. 29 references.

003205 Zahn, Theodore P. Laboratory of Psychology and Psychopathology, NIMH, Bethesda, MD 20205 **Predicting outcome from measures of attention and autonomic functioning.** In: Baxter, C., Perspectives in schizophrenia research. New York, Raven Press, 1980. 445 p. (p. 81-106).

To support the thesis that attention and autonomic nervous system (ANS) activity should be measured more often in clinical studies of schizophrenia, evidence is presented which suggests that attention and ANS functioning may be partly biologically determined traits with etiological and prognostic significance. New evidence is reviewed on: 1) the relationship of measures of attentional and autonomic functioning to subsequent clinical course (that is, outcome) in both unmedicated patients and those taking antipsychotic drugs; 2) changes in psychophysiological functioning in relation to clinical changes -- changes which occur in unmedicated patients are compared to changes attributable to drugs; and 3) other relevant evidence on possible genetic and neurochemical determinants of the attentional ANS deficts in schizophrenia. The data suggest that ANS activity is related to biogenic amines and to enzyme activities which are thought to play important etiological roles in schizophrenia. The discussion that followed the presentation of the paper at a symposium on strategies for future research in schizophrenia is given. 61 references.

09 DRUG TRIALS IN AFFECTIVE DISORDERS

003206 Alby, J. M.; Ferreri, M. Dept. de Psychiatrie et de Psychologie Medicale, Hopital Saint-Antoine, 184, rue du Faubourg-Saint Antoine, F-75012 Paris, France **/Clinical study of maprotiline in the treatment of depressive states: compilation of 1520 observations./** Etude clinique de la maprotiline dans le traitement des etats depressifs: synthese de 1520 observations. Encephale. 6(2):145-159, 1980.

A new antidepressant, maprotiline, was studied in general practice. A total of 1520 cases, complied by 150 general practitioners and 27 psychiatrists, were evaluated through a questionnaire study. In the majority of cases, the drug was given to outpatients. Results indicate good or excellent improvement with least possible intolerance of mental disorders in 79% of cases. It is concluded that maprotiline is an effective antidepressant, requiring the usual precautions; it is well suited to outpatient treatment of various forms of depression often encountered in daily practice. 42 references. (Journal abstract modified)

003207 Bertolini, Raffaele. Istituto Psichiatrico **/Observations on the use of citicoline in dysthymic patients./** Osservazioni sull'impiego della citicolina nelle sindromi distimiche. Rivista Sperimentale di Freniatria. 103(2):406-411, 1979.

The utilization of citicoline in the treatment of dysthymic patients was studied in 30 subjects suffering from depressive diseases. The sample consisted of men aged 18 to 65, who were suffering from endogenous, reactive, senile, and neurotic depression. The first week the subjects were administered 750 to 1000mg of citicoline daily. During the next 3 weeks, the treatment was reduced to 500mg per day. Results show that citicoline in monotherapy is effective only in depressive involutional syndromes. However, it should be added that the use of the drug in association with tricyclic antidepressants causes a less prolonged but more complete recovery of the affective equilibrium. 7 references. (Journal abstract modified)

003208 Blauwblomme, Jean-Francois; Garre, Jean-Bernard; L'Huillier, Jean-Paul; Leguay, Denis; Wartel, Roger. Clinique hospitalo-universitaire, F-49470 Sainte-Gemmes-sur-Loire, France **/Therapeutic trial of a new antidepressant: mianserin./** Essai therapeutique d'un nouvel anti-depresseur: la mianserine. Psychologie Medicale. 12(7):1602-1608, 1980.

The use of mianserin in the treatment of depression was studied. Thirty depressed patients of all ages and both sexes were given 10mg of mianserin three times daily for the first week and 20mg three times daily for 3 more weeks. The subjects were evaluated regularly using the Hamilton Depression Scale. Results indicate improvement in the majority (25) of the cases. The drug also demonstrated sedative properties, good tolerance, and few harmful side-effects. 28 references. (Journal abstract modified)

003209 Boldyrev, A. I.; Pozdnyakov, V. S. Klinika epilepsii Moskovskogo NII psikhiatrii Ministerstva zdravookhraneniya RSFSR, Moscow, USSR **/Pathomorphosis of chronic epileptic psychoses./** Patomorfoz khronicheskikh epilepticheskikh psikhozov. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):829-833, 1980.

The pathomorphosis of chronic epileptic psychoses was studied in 69 patients (age 20 to 60), all of whom were hospitalized at the time of the study. Anticonvulsive treatment combined with neuroleptic drugs was found to hinder the development of such chronic psychoses, but it was unsuccessful in preventing the development of intellectual and personality defects. Although the program of treatment reduced impulsiveness in the

patients' behavior, it did nothing to reduce aggressiveness and in some cases aggravated the problem of hallucinations, particularly auditory ones. 14 references. (Journal abstract modified)

003210 Braccini, T.; Darcourt, G. Service de Psychiatrie et de Psychologie Medicale, Hopital Pasteur, F-06031 Nice Cedex, France /**Correlations between lithium levels in cerebrospinal fluid and lithium levels in blood plasma and erythrocytes.**/ Correlations entre la lithorachie et les taux de lithium dans le plasma et dans les erythrocytes. Encephale. 6(2):131-137, 1980.

Correlations between lithium levels in cerebrospinal fluid and in blood plasma and erythrocytes were studied. The lithium levels were measured in 22 patients who had received lithium therapy. Results indicate a greater correlation between levels from plasma and cerebrospinal fluid than between levels from erythrocytes and cerebrospinal fluid. A formula was developed which is used to predict lithium levels in cerebrospinal fluid. It was also found that cerebral organicity did not influence the transmembrane passage of lithium. 5 references. (Journal abstract modified)

003211 Brown, Walter Armin; Haier, Richard J.; Qualls, C. Brandon. Providence V.A. Medical Center, Providence, RI **The dexamethasone suppression test in the identification of subtypes of depression differentially responsive to antidepressants.** Psychopharmacology Bulletin. 17(1):88-90, 1981.

Studies of the dexamethasone suppression test (DST) in the identification of subtypes of depressive patients differentially responsive to antidepressants are described. Preliminary results suggest that the DST identifies two subgroups of depression which differ in course of illness and in early treatment response. It is reported that nonsuppressors with primary depression are older than suppressors. Neurochemical data indicate that imipramine and desipramine are likely to have greater in vivo effects on noradrenaline uptake and lesser effects on serotonin uptake than clomipramine and amitriptyline. The apparent preferential response among nonsuppressors to desipramine and imipramine, along with data suggesting tonic noradrenergic inhibition of the pituitary/adrenal system, raises the speculation that depressed patients with nonsupression have a functional deficiency in central noradrenergic transmission. 7 references. (Author abstract modified)

003212 Burten, William; Ballard, Bruce L. Dept. of Psychiatry, New York Hospital-Westchester Div., Cornell University Medical College, 21 Bloomingdale Rd., White Plains, NY 10605 **Hypomania as a stable state: lithium prophylaxis in two patients.** American Journal of Psychiatry. 138(4):523-524, 1981.

Two case reports are presented on the successful treatment of two patients with hypomania through a procedure which titrated lithium to maintain the patients at a functional level. The patients continued to be hypomanic but were able to work steadily and maintained object relations on an acceptable social level for more than 5 years. Such a treatment approach is recommended for the small number of bipolar affective disordered patients who might otherwise stop their medication because they miss the euphoria associated with chronic mood elevation and who are capable of functioning well at a hypomanic level. 7 references.

003213 Claghorn, James L.; Mathew, Roy J. Texas Research Institute of Mental Sciences, Houston, TX **Clinical trials with new bicyclic and tetracyclic compounds: zimelidine and maprotiline.** Psychopharmacology Bulletin. 17(1):23-26, 1981.

Clinical trials with new bicyclic and tetracyclic compounds (zimelidine and maprotiline) are reviewed, and the biochemical events underlying depressive states are discussed. The paradox of the clinical effectiveness of two agents with such different effects (zimelidine, a potent serotonin (5-HT) reuptake inhibitor; and maprotiline, a comparatively specific inhibitor of the nonrepinephrine (NE) system) is discussed in relation to various clinical trials of these agents. It is concluded: 1) that animal models are inappropriate, as the neurochemical derangements demonstrated in depressed humans are not present in animals; 2) that the tricyclic antidepressants (TCA) share a mechanism in common which is independent of NE or 5-HT effects such as the induction of subsensitivity of NE stimulated adenyl cyclase; and 3) that results of acute animal experiments may not reflect effects resulting from chronic treatment with TCAs. 8 references. (Author abstract modified)

003214 Coleman, James H.; Johnston, Joseph A.; Callaway, Janice T.; May, Charles N.; Druff, James H. Pharmacy Dept., V. A. Hospital, 1030 Jefferson, Memphis, TN **Protocols for the use of psychoactive drugs -- Part II: protocol for the treatment of depression with tricyclic antidepressants.** Journal of Clinical Psychiatry. 42(2):65-68, 1981.

In the second in a series of protocols for the use of psychoactive drugs, a stepwise decision-making process is presented for the treatment of depression with tricyclic antidepressants. The 39 step protocol traces patient management from the initial diagnosis of depression through assessment of treatment response and drug related problems (side-effects, dose adjustment, alternative medication), through followup of continuing treatment and yearly psychiatric reexamination. 14 references.

003215 Davis, Bonnie M.; Pfefferbaum, Adolf; Krutzik, Siegfried; Davis, Kenneth L. Special Diagnostic and Treatment Unit, V.A. Medical Center, 130 West Kingsbridge Rd., Bronx, NY 10468 **Lithium's effect on parathyroid hormone.** American Journal of Psychiatry. 138(4):489-492, 1981.

Changes in serum calcium and serum phosphate concentrations and of urinary calcium excretion which may be attributable to parathyroid hormone (PTH) in lithium treated psychiatric patients were investigated. PTH was measured in 18 depressed patients receiving lithium, and it was significantly higher in these Ss than in 150 normal Ss. For all patients, serum calcium concentrations correlated significantly with serum lithium concentrations. These results indicate that lithium may cause biochemical hyperparathyroidism. Secondary hyperparathyroidism in certain patients with lithium nephrotoxicity is also possible. 14 references. (Author abstract modified)

003216 de Cuyper, Hugo J. A.; van Praag, Herman M.; Mulder-Hajonides, Wilhelmina R. E. M.; Westenberg, Herman G. M.; de Zeeuw, Rokus A. Westenberg: Dept. of Psychiatry, Academic Hospital Catharijnesringel 101, Utrecht, Netherlands **Pharmacokinetics of clomipramine in depressive patients.** Psychiatry Research. 4(2):147-156, 1981.

Ten patients with a vital depressive syndrome were treated for 4 weeks with clomipramine (CI), five receiving the drug by mouth and five receiving it first intramuscularly (i.m.) and then by mouth. Plasma concentrations of CI and desmethylclomipramine (DCI) were measured daily. Both concentrations showed marked interindividual differences, especially after oral administration of the drug. The mean relative CI clearance after repeated i.m. injections was .441kg-1hour-1. The route of administration proved to exert a marked influence on the plasma concentration ratio CI/DCI. In this small population, no significant relationship could be demonstrated between plasma CI and DCI concentrations, or the sum of both, and clinical effect. 15 references. (Author abstract)

003217 Donlon, Patrick T.; Biertuemphel, Hugo, III; Willenbring, Mark. Suite 274, 601 University Ave., Sacramento, CA 95825 **Amoxapine and amitriptyline in the outpatient treatment of endogenous depression.** Journal of Clinical Psychiatry. 42(1):11-15, 1981.

In a double-blind investigation the onset of action, the efficacy, and the safety of amoxapine and amitriptyline were compared in 46 endogenously depressed outpatients. Statistical analysis demonstrated relatively few significant differences in improvement between the two groups. Most of the differences favored amoxapine, however, and on all measures there were clear trends favoring amoxapine for more rapid onset of action or greater overall efficacy or both. 17 references. (Author abstract)

003218 Emrich, H. M.; von Zerssen, D.; Kissling, W.; Moller, H.-J.; Windorfer, A. Max-Planck Institut fur Psychiatrie, Kraepelinstr. 10, D-8000 Munchen 40, West Germany **The effect of sodium valproate on mania: the GABA-hypothesis of affective disorders.** Archiv fur Psychiatrie und Nervenkrankheiten. 229(1):1-16, 1980.

A possible antimanic property of the GABAergic anticonvulsant valproate was examined by use of a double-blind placebo controlled ABA design in five acutely ill manic patients. In four cases a marked improvement was observed after valproate medication, whereas one patient showed no response. Seven further patients with frequently recurring episodes of a manic or maniform schizoaffective psychosis, irresponsive to lithium prophylaxis, were chronically treated with valproate in combination with low doses of lithium (one case only with valproate). Over an observation period of 1.5 to 3 years none of the patients exhibited a relapse. It is proposed that, in general, GABAergic anticonvulsants possess antimanic properties and that the specific antimanic effect of lithium is due to a GABAergic mode of action. The possible role of GABA systems in affective disorders and in organic types of psychoses is considered. 59 references. (Author abstract modified)

003219 Emrich, H. M.; von Zerssen, D.; Kissling, W.; Moller, H. -J. Max-Planck-Institut fur Psychiatrie, D-8000 Munchen 40, West Germany **On a possible role of GABA in mania. Therapeutic efficacy of sodium valproate.** Advances in Biochemical Psychopharmacology. 26:287-296, 1981.

The therapeutic value of sodium valproate in manic psychoses was investigated in two studies: 1) a placebo controlled, double-blind, ABA design with acutely manic inpatients; and 2) an open trial, with prophylactic long-term treatment of lithium nonresponders (outpatients). Results strongly suggest that valproate is a promising candidate for use in treatment of manic syndromes, since the dosage range required for its prophylactic and acute effects upon mania is in the same range as in the pharmacotherapy of epileptic disorders, and since side-effects are rare. Results are consistent with the hypothesis that activation of the GABA system may produce antimanic effects. Clinical implications are noted. 31 references.

003220 Extein, Irl; Pickar, David; Gold, Mark S.; Gold, Philip W.; Pottash, A. L. C.; Sweeney, Donald R.; Ross, Richard J.; Rebard, Robert; Martin, David. Fair Oaks Hospital, Summit, NJ **Methadone and morphine in depression.** Psychopharmacology Bulletin. 17(1):29-33, 1981.

The effects of single doses of methadone and morphine on clinical depression and neuroendocrine response were investigated in two experiments. The first study was an open investigation in 10 inpatients with major depressive disorder (defined by research diagnostic criteria; the second study was a double-blind, placebo controlled study of 6 depressed inpatients. Despite the lack of clear clinical antidepressant effects of single doses of opioids, the neuroendocrine results suggest dysfunction in central endorphin systems in depression. 10 references. (Author abstract modified)

003221 Fieve, Ronald R.; Meltzer, Herber L.; Dunner, David L.; Fleiss, Joseph L. New York State Psychiatric Institute, 722 West 168th Street, New York, New York 10032 **/The repression of the response to prophylactic treatment./** La represion del litio respuesta al tratamiento profilactico. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(3):205-210, 1980.

The lithium content in erythrocytes and plasma of patients suffering from depression was studied. Lithium pumps, the active interchange of lithium between cells and intercellular space, were obtained in 69 depressive patients over a period of 24 months. Results indicate no significant differences between subjects who responded well or badly to treatment with respect to age, sex, or lithium content. Those patients with lower lithium flow responded well to prophylactic treatment while continuing their lithium therapy. It is concluded that lithium flow is an index of the capacity of lithium to prevent depression. 12 references.

003222 Frezza, G.; Di Marco, E.; Giuffra, F. Ospedale Psichiatrico Provinciale, Genova-Quarto, Italy **/Nomifensine: considerations on a new nontricyclic antidepressant./** Alcune considerazioni su un nuovo antidepressivo non triciclico: il nomifensine. Rivista Sperimentale di Freniatria. 103(1):193-200, 1979.

The use of a new nontricyclic antidepressant, nomifensine, was studied in 38 subjects with depressive symptomatology. The subjects, 15 men and 23 women, were examined and treated with nomifensine in doses varying from 25 to 250mg daily. The effects of nomifensine were evaluated with Hamilton's Depression Scale. The results indicate that nomifensine is an excellent antidepressant drug, particularly for neuroses and reactive depressive syndromes, and that it is very easy to manage and has few side-effects. 10 references. (Journal abstract modified)

003223 Gawin, Frank H.; Markoff, Richard A. Yale University School of Medicine, 34 Park Street, New Haven, CT 06508 **Panic anxiety after abrupt discontinuation of amitriptyline.** American Journal of Psychiatry. 138(1):117-118, 1981.

Withdrawal symptoms following abrupt discontinuation of amitriptyline are reported in a 29-year-old man admitted to the hospital for depressed mood and suicidal impulses apparently associated with his wife's request for a divorce. At discharge, the patient elected to enter an Alcoholics Anonymous oriented halfway house to qualify for admission; he abruptly discontinued both amitriptyline and disulfiram. He experienced a withdrawal attack 2.5 days later which corresponded to DSM-III criteria for an episode of panic anxiety. Subjective feelings of anxiety and accompanying autonomic signs were relieved by restarting amitriptyline and not by psychological support or oxazepam. Further symptoms recurred when amitriptyline was stopped a second time and again responded to reinitiation of amitriptyline. 9 references.

003224 Georgotas, Anastase; Gershon, Samuel. Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **Historical perspectives and current highlights on lithium treatment in manic-depressive illness.** Journal of Clinical Psychopharmacology. 1(1):27-31, 1981.

A historical review of the use of lithium in the treatment of manic-depressive illness is presented. It is noted that in Roman times physicians first recommended alkaline springs in the treatment of mania. Contemporary interest in lithium began in 1949,

with a report of improvement of mania in 10 of 10 patients. Since then, lithium has become increasingly popular both for treating acute mania and as a prophylactic agent. Its use in depression is also described. The clinical spectrum of lithium is discussed, and its use for disorders other than mania is described. 45 references. (Author abstract modified)

003225 Gillis, John S. Oregon State University, Corvallis, OR 97331 **Effects of tricyclic antidepressants on interpersonal learning.** Research Communications in Psychology, Psychiatry and Behavior. 6(1):49-62, 1981.

Three tricyclic antidepressants, amitriptyline, imipramine and doxepin, used alone and in combination with antipsychotics, were compared with regard to their effects on several parameters of interpersonal learning. Fifty depressed inpatients were divided into seven treatment groups based on their existing chemotherapy regimens. Performance was assessed on a series on quantitative indices derived from the learning tasks. Subjects in all treatment conditions performed in a stable, effective manner in marked contrast to patients in previous studies who were receiving neuroleptics and dealing with similar materials. No statistically significant differences were obtained among the tricyclics although the pattern of nonsignificant differences was highly consisistent. amitriptyline subjects, whether receiving supplementary antipsychotic medication or not, performed best on every major index of performance. 20 references. (Author abstract)

003226 Goldberger, E.; Clavere, J. L.; Espagno, J. Hopital de Purpan-Casselardit, F-31052 Toulouse Cedex, France **/Dosage of intratumoral lithium (cerebral glioblastoma): on a failure of treatment of manic-depressive psychosis./** Dosage du lithium intra-tumoral (glioblastome cerebral): a propos d'un echec du traitement d'une psychose maniaco-depressive. Encephale. 6(2):139-144, 1980.

A case of cyclothymia in a 49-year-old man in a subacute manic phase treated by lithium carbonate is described. Lithium therapy failed to reverse the cyclothymia, although a valuable blood level of lithium was achieved. Upon discovery of a brain tumor, unaccompanied by neurological or psychological symptoms, neurosurgery was performed which showed a right centromedial cerebral glioblastoma. A biopsy revealed high intracellular level of lithium with a high ratio of cell to blood levels. It is postulated that the cells of the brain tumor have a special affinity for lithium, depriving the normal tissue by competition. This would explain the sudden failure of lithium therapy. 13 references. (Journal abstract modified)

003227 Halaris, Angelos E.; Stern, Warren; Harto-Truax, Nancy. Veterans Administration Hospital, Brentwood, CA **Clinical efficacy of the new antidepressant bupropion (Wellbutrin).** Psychopharmacology Bulletin. 17(1):140-142, 1981.

The efficacy and safety of bupropion, a compound remotely related to catecholamines, in the treatment of depression were investigated in a double-blind, placebo controlled study. Results clearly demonstrate that bupropion is significantly more effective than placebo in controlling the symptoms of depression. The response rate among the 21 patients studied was about 60%, which is comparable to the response rate generally obtained with tricyclic antidepressants. Bupropion appears to possess anxiolytic activity when anxiety symptoms accompany the depressive syndrome. However, the rate of improvement of the anxiety symptoms is slower than that of depression. 2 references.

003228 Halbreich, Uriel; Weinberg, Uzi; Stewart, Jonathan; Klein, Donald F.; Weitzman, Elliot D.; Quitkin, Frederic M. Dept. of Psychiatry, Montefiore Hospital and Medical Center, 111 E. 210th St., Bronx, NY 10467 **An inverse correlation between serum levels of desmethylimipramine and melatonin-like immunoreactivity in DMI-responsive depressives.** Psychiatry Research. 4(1):109-113, 1981.

The relationship between plasma levels of the tricyclic antidepressant desmethylimipramine (DMI) and plasma levels of melatonin like immunoreactivity was studied in 32 endogenously depressed patients. An inverse correlation between plasma levels of DMI and plasma levels of melatonin like immunoreactivity was found in the group of clinical responders to the chronic administration of the drug. The nonresponders had higher levels of melatonin like immunoreactivity at comparable levels of DMI. This finding is consistent with the hypothesis that chronic high plasma levels of DMI may down regulate the beta-adrenergic receptors in man; however, some other homeostatic mechanisms may be involved in the clinical response. 24 references. (Author abstract)

003229 Harrison-Read, P. E. Dept. of Pharmacology, Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, England **Synaptic and behavioural actions of antidepressant drugs: further thoughts on the implications for theories of depression.** Trends in NeuroSciences. 4(2):32-34, 1981.

Research strategies for determining the synaptic and behavioral actions of antidepressant drugs are evaluated. By reflecting the integrated functioning of neural systems, behavioral studies can reveal the net effect on noradrenergic transmission of various presynaptic and postsynaptic changes which potentially could alter transmission in opposite directions. A similar case can be made for the value of electrophysiological studies of cells receiving noradrenergic input. Studying the integrated function of noradrenergic systems during long-term drug administration may also help in distinguishing primary effects of drugs on synaptic functions from adaptive or compensatory changes occurring secondarily, and may be particularly relevant to antidepressant effects. Topics discussed include: effects of tricyclic antidepressants on noradrenergic systems; antidepressants and information transfer; antidepressants and lithium as stabilizers of monoaminergic transmission; and a permissive monoamine hypothesis of depression. 27 references.

003230 Hugonenq, H.; Uso, T. Barnetil, Laboratoire Delagrange, Marseille, France **/On the effects of sultopride administered in low dosages to older children and adolescents./** A propos de l'interet du sultopride utilise a faibles doses chez le grand enfant et l'adolescent. Neuropsychiatrie de l'Enfance et de l'Adolescence. 28(12):593-597, 1980.

The effects of sultopride administration in low dosages to 15 psychotic patients between ages 10.5 and 17 were studied. Diagnoses included psychoaffective disorders, paranoid psychosis, early childhood psychosis, dissociative psychosis, early infantile autism, epileptic psychosis, and characterological disorders. The object of treatment was to suppress, or at least partially reduce, symptoms of instability, aggressiveness, delirium, and other pathological manifestations responsible for maladjusted behavior. Dosages between 15mg and 60mg daily (corresponding to 0.5 to 1mg/kg/day) were administered for an average duration of 1 month. The results show that sultopride caused some motor relaxation, which increased the effectiveness of psychotherapeutic treatment. Side-effects were common, however.

003231 Jessel, H. J.; Jessel, I.; Seeler, W. Allgemeines Krankenhaus, Hamburg, West Germany **/Double-blind study of mianserin and amitriptyline./** Doppelblindstudie zwischen Mianserin und Amitriptylin. Neurologie und Psychiatrie fur die Praxis. 5:262-264, 1979.

In a double-blind study, mianserin and amitriptyline were compared for their antidepressant effects. Overall clinical impressions and Beck's self-evaluation scale were the test measures employed. Despite obvious similarities as antidepressants, mianserin had fewer side-effects. Furthermore, no marked hematological or other chemical changes were found during the treatment with mianserin. (Journal abstract modified)

003232 Kabes, J. Ustavni 91, 180 00 Praha 8, Czechoslovakia / **Combined administration of nialamide and viloxazine to depressive patients./** Kombinovane podavani nialamidu a viloxazinu u depresivnich nemocnych. Ceskoslovenska Psychiatrie. 75(3):166-174, 1979.

The effect of successive and combined treatment of depression with viloxazine and nialamide was studied. It was found that the drugs get a very good therapeutic response, undesirable reactions are reduced to a minimum, and no symptoms of toxicity are observed. Viloxazine seems to be the drug of choice for overcoming the therapeutic gap between the administration of monoamine oxidase inhibitors (MAOI) and tricyclic antidepressants, or vice versa. It is concluded that combined administration of MAOI and viloxazine could be an effective therapeutic treatment for depressions which resist the classic antidepressive treatment presently available. 17 references. (Journal abstract modified)

003233 Kane, John M.; Quitkin, Frederic M.; Rifkin, Arthur; Ramos-Lorenzi, Jorge R.; Saraf, Kishore; Howard, Alfreda; Klein, Donald F. Long Island Jewish-Hillside Medical Center, Glen Oaks, NY **Prophylactic lithium with and without imipramine for bipolar I patients: a double-blind study.** Psychopharmacology Bulletin. 17(1):144-145, 1981.

The value of adjunctive imipramine in lithium treated bipolar manic-depressive illness was investigated. In a double-blind study, 37 patients were randomly assigned to lithium plus imipramine and 38 to lithium and placebo imipramine. Because depressive relapse rates were so low in both groups, the advantage of adding imipramine to a lithium prophylactic regime could not be demonstrated. On the other hand, there was little evidence that the combination of lithium and imipramine caused adverse reactions with the possible exception of a subgroup of female or mania prone patients. 4 references.

003234 Kaumeier, H. S.; Haase, H. J. Kalmusweg 11, D-6701 Neuhofen, West Germany **A double-blind comparison between amoxapine and amitriptyline in depressed in-patients.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(4):177-184, 1980.

The effects of amoxapine (mean total daily dose, 147.5mg) were compared with those of amitriptyline (mean total daily dose, 152.5mg) in a 6 week double-blind study of 50 depressed inpatients. Amoxapine appeared to be superior to amitriptyline on the basis of scores on the Hamilton Psychiatric Rating Scale for depression, Beck Depression Inventory Short Form, Nurses Observational Scale for Inpatient Evaluation, Clinical Global Impression, Patient Self-Evaluation Scale, and other quantitative assessments. Amoxapine also showed earlier onset of action than amitriptyline. The incidence of side-effects was comparable in the two groups. 3 references. (Author abstract modified)

003235 Kovacs, Maria; Rush, A. John; Beck, Aaron T.; Hollon, Steven D. Western Psychiatric Institute and Clinic, 3811 O'Hara St., Pittsburgh, PA 15261 **Depressed outpatients treated with cognitive therapy or pharmacotherapy: a one-year follow-up.** Archives of General Psychiatry. 38(1):33-39, 1981.

Using a controlled, clinical trial format, 44 nonpsychotic, nonbipolar, depressed outpatients were treated with cognitive therapy or imipramine hydrochloride over a 12 week period. Although both interventions were associated with significant reductions in levels of depression, the cognitive therapy patients showed greater symptomatic improvement and a higher treatment completion rate. A 1 year naturalistic followup of the 35 subjects who completed the protocol revealed that although many of the patients had a variable clinical course, both original treatment groups remained generally well. Self-rated depressive symptomatology was significantly lower for those who, 1 year earlier, had completed cognitive therapy than for those who had been in the clinical trial's pharmacotherapy cell. While there were several other interesting trends in favor of the cognitive therapy patients, none of the between group differences were significant. The pragmatic and clinical implications of the followup results are discussed. 27 references. (Author abstract)

003236 Kupfer, David J.; Spiker, Duane G.; Coble, Patricia A.; Neil, John F.; Ulrich, Richard; Shaw, David H. Western Psychiatric Institute and Clinic, 3811 O'Hara St., Pittsburgh, PA 15261 **Sleep and treatment prediction in endogenous depression.** American Journal of Psychiatry. 138(4):429-434, 1981.

The use of psychobiological measures to increase the accuracy of clinical prediction in primary endogenous depression was assessed in 34 patients. Ss were treated with amitriptyline and EEG monitored sleep criteria were applied. Such criteria were more significant than clinical status alone in predicting clinical response. Prolonged REM latency and reduced difficulty in sleep onset following the administration of amitriptyline were the main sleep variables contributing to this prediction equation. The data suggest a strong relationship between clinical outcome and psychobiological profile in patients with endogenous depression after a pharmacological probe with a tricyclic antidepressant. 24 references. (Author abstract modified)

003237 Linkowski, P.; Brauman, H.; Mendlewicz, J. Mendlewicz: Dept. of Psychiatry, Hospital Erasme, Free University of Brussels, 808 Route de Lennick, B-1070 Brussels, Belgium **Thyrotrophin response to thyrotrophin-releasing hormone in unipolar and bipolar affective illness.** Journal of Affective Disorders. 3(1):9-16, 1981.

The plasma levels of thyrotrophin (TSH) and the response of this hormone to 200 mcg of thyrotrophin releasing hormone (TRH) were studied in 27 unipolar and 24 bipolar depressed females before and after amitriptyline treatment, as well as in 42 normal controls. No significant differences were noted in basal TSH levels when groups were studied according to diagnosis, menopausal status and antidepressant treatment. After amitriptyline treatment, the TSH response to TRH, which was impaired before treatment in bipolar premenopausal Ss, improved significantly. No significant differences as a function of treatment could be demonstrated in unipolar postmenopausal Ss in whom TSH response was blunted before treatment. The findings suggest that the differential TSH response to TRH in unipolar and bipolar patients may constitute biological markers of endocrine dysfunction in clinical subgroups of affective disorders. 21 references. (Author abstract modified)

003238 Lloyd, Camille; Zisook, Sidney; Click, Maurice, Jr.; Jaffe, Kenneth E. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical School, Houston, TX **Life events and response to antidepressants.** Journal of Human Stress. 7(1):2-15, 1981.

The relationship of life-events and response to tricyclic antidepressants was examined among 80 outpatients with unipolar, primary depressions. Participants were randomly assigned to receive either amitriptyline or amoxapine. Events occurring in either the 2 or 12 months prior to starting treatment (antecedent

events) were unrelated to antidepressant response. However, events occurring during the treatment period itself (concurrent events) were significantly related to tricyclic response. Patients evidencing the poorer response reported almost three times as many concurrent events as the more improved patients. A poorer tricyclic response was associated in particular with concurrent events which were undesirable, health related, and perceived as being outside of the patient's own control. It is suggested that the continuing occurrence of stressor events probably interferes with treatment efforts and, therefore, it may be important for the therapist to pay careful attention to the ongoing life stresses of the depressed patient. 31 references. (Author abstract)

003239 Logue, James N.; Sachais, Barry A. GEOMET Technologies, Inc., Rockville, MD **Factors which affect antidepressant drug response in a multicenter controlled trial.** Psychopharmacology Bulletin. 17(1):138-139, 1981.

Factors which affect antidepressant drug response were studied via analysis of data from a multicenter trial which compared a new tetracyclic antidepressant, maprotiline, with imipramine in the treatment of severe depression. Four pretreatment characteristics of the 231 Ss were investigated: age, global severity of illness, weeks since onset of current episode, and pretreatment level of anxiety. Results indicate that maprotiline, a specific norepinephrine reuptake inhibitor, is preferentially effective with younger patients, more severely depressed patients, and those who have a relatively recent onset of the current episode. 5 references.

003240 McGrath, Patrick J.; Quitkin, Frederick, J.; Stewart, Jonathan W.; Leibowitz, Michael; Fyer, Abby; Davies, Sharon; Klein, Donald F. New York State Psychiatric Institute, New York, NY **Novel antidepressants: a clinical trial of mianserin.** Psychopharmacology Bulletin. 17(1):21-23, 1981.

A clinical trial of a novel tetracyclic antidepressant, mianserin, with a sample of patients who met research diagnostic criteria for major depressive disorder is described. Clinical response was steady and progressive with continuing improvement up to 6 weeks of active drug therapy. This suggests that maximum improvement requires at least 6 weeks of treatment, and/or a dose of 150mg/day. Mianserin's efficacy is shown to approximate that of tricyclic antidepressive drugs. Its low incidence of side-effects and apparent high margin of safety make it a useful addition to the psychopharmacologic armamentarium. 9 references. (Author abstract modified)

003241 McGrath, Patrick J.; Quitkin, Frederick M.; Stewart, Jonathan W.; Liebowitz, Michael; Fyer, Abby; Davies, Sharon. 722 West 168th St., New York, NY 10032 **An open clinical trial of mianserin.** American Journal of Psychiatry. 138(4):530-532, 1981.

A pilot study of mianserin was conducted in a group of endogenomorphic depressive patients to test the efficacy of this tetracyclic antidepressant, to clarify the useful dose range and to determine side-effects. A maximum dose of 150mg/day was used with 10 inpatients and 15 outpatients diagnosed as suffering from RDC major depression. The dosage schedule was well tolerated, side-effects were mild, and its margin of safety was high. Continued, controlled studies of the drug are recommended. 10 references.

003242 McKnew, Donald H.; Cytryn, Leon; Buchsbaum, Monte S.; Hamovit, Joel; Lamour, Martine; Rapoport, Judith L.; Gershon, Elliot S. National Institute of Mental Health, Bldg 10, Room 3N204, 9000 Rockville Pike, Bethesda, MD 20205 **Lithium in children of lithium-responding parents.** Psychiatry Research. 4(2):171-180, 1981.

Six offspring of manic-depressive patients, whose parents were lithium responders, were selected on the basis of their incapacitating psychopathology for treatment with lithium. The children ranged in age from 6 to 12. A double-blind cross-over design was used over 16 to 18 weeks. Weekly ratings were done, and average evoked potentials (EPs) were measured at each cross-over. Two children diagnosed as having a bipolar affective disorder had a clear cut response to lithium and were strong augmenters on the EP. This, taken together with the similarity of the EP changes on lithium to those occurring in adult patients treated with lithium, supports a physiological parallel between bipolar affective illness in adults and children. 40 references. (Author abstract)

003243 Mirin, Steven M.; Schatzberg, Alan F.; Creasey, David E. Outpatient Dept., McLean Hospital, Belmont, MA 02178 **Hypomania and mania after withdrawal of tricyclic antidepressants.** American Journal of Psychiatry. 138(1):87-89, 1981.

The development of signs of hypomania or mania shortly (2 to 7 days) after drug withdrawal is reported in seven patients who had been maintained on tricyclic antidepressants. Three patients responded promptly to treatment with neuroleptics. One patient receiving lithium and three others who received no further drug treatment experienced more gradual resolution of symptoms. Tricyclic withdrawal is accompanied by changes in the turnover rate of individual neurotransmitters, as well as by shifts in the equilibrium between various transmitter systems. These events may be accompanied by alterations in mood. Although relapse to depression is more common, hypomania or mania may also occur. 12 references. (Author abstract)

003244 Musa, Mahmoud N. Research Dept., Illinois State Psychiatric Institute, 1601 West Taylor Street, Chicago, IL 60612 **Depression sub-types affect the steady-state plasma levels and therapeutic efficacy of amitriptyline and nortriptyline.** Research Communications in Psychology, Psychiatry and Behavior. 6(1):1-8, 1981.

The effect that depression has on plasma levels and the therapeutic efficacy of amitriptyline and nortriptyline were examined in 25 patients. The steady state plasma levels as well as the therapeutic response were significantly lower in patients with bipolar affective disorder than those with unipolar depression. These differences in plasma levels may be caused by differences in rates of diffusion of the drugs through membranes, capacity of drug metabolizing enzymes, rates of blood flow through the liver, or volumes of distribution. These findings lend support to the theory of biological differentiation of depression types. It is concluded that confirmation of these findings may have practical utility in pharmacotherapy of patients with affective disorders by enhancing the ability to individualize drug dosages. 15 references. (Author abstract modified)

003245 Nahunek, K.; Svestka, J.; Ceskova, E. Jihlavska 102, 657 15 Brno-Bohunice, Czechoslovakia **/Clinical experience with retard dibenzepine (Noveril 240) in endogenous depressions accompanied by symptoms of drug resistance./** Klinicke zkusenosti s retardovanou formou dibenzepinu (Noveril 240) u endogennich depresi se znamkami farmakorezistence. Ceskoslovenska Psychiatrie. 75(3):160-165, 1979.

Retard dibenzepine was administered to 42 patients (22 males and 20 females) suffering from endogenous depression, accompanied by symptoms of drug resistance. Total remission of depression was observed in 50% of the cases, and partial remission in 21%. The patients showed very good tolerance of the drug, even when they suffered from associated somatic diseases. It is concluded that patients suffering from endogenous and involutional depression do not always need to be treated with expen-

sive drug combinations or use the convulsive method when the usual antidepressants are not effective. Treatment with retard dibenzepine is fast and effective. 13 references. (Journal abstract modified)

003246 Nutter, David; Brunswick, David. St. Joseph Hospital, 250 College Ave., Lancaster, PA 17603 **Relevancy of tricyclic antidepressant plasma levels.** American Journal of Psychiatry. 138(4):526-527, 1981.

A case report is presented of a depressed man treated with amitriptyline to illustrate some of the problems in treating depressed patients with antidepressants. The ability to measure tricyclic plasma levels in this case enabled treatment with a dose that would normally be considered ineffective. The findings have implications for studies to alleviate the toxicity of tricyclics. 7 references.

003247 O'Connell, Ralph A.; Mayo, Julia A. Dept. of Psychiatry, St. Vincent's Hospital, New York, NY **Lithium: a biopsychosocial perspective.** Comprehensive Psychiatry. 22(1):87-93, 1981.

Following a brief discussion of the impact of psychopharmacological treatment of manic-depressive illness with lithium carbonate, a review is presented of studies of patients, their families, and children to underline the importance of a biopsychosocial perspective in understanding and treating the manic-depressive patient. Data from a 10 year study are summarized including clinical response, morbidity, mortality, patient psychological and social functioning, and the impact of the disorder and lithium treatment on spouses and offspring. These studies underscore the importance of considering the multiple, complex, interacting systems of the patient, none of which alone suffice to explain etiology or to plan treatment. The patient must be understood psychodynamically as well as neurobiologically. A psychotherapeutic approach to psychosocial stressors can diminish affective episodes and enhance compliance with lithium therapy and reduce stress within the family system; family and marital therapy can reduce stress on the patient; treatment of parent and family can greatly reduce the trauma to children of growing up in a pathological household and ameliorate its developmental consequences; early casefinding and the possibility of preventive therapy for at-risk children are also facilitated. 8 references.

003248 Paykel, Eugene S. Dept. of Psychiatry, St. George's Hospital Medical School, University of London, London S.W. 17, England **Phenelzine and amitriptyline in neurotic depression. (Unpublished paper).** Final Report, NIMH Grant R05-MH-26640, 1980. 14 p.

The comparative efficacy of phenelzine, a monoamine oxidase inhbitor, and amitriptyline, a tricyclic antidepressant, was investigated in patients with depression, with particular emphasis on the clinical classifications of depression and response to treatment of subtypes. The open predictor study of 64 depressed patients showed that better response to phenelzine was found in nonhospitalized patients, less severely ill, not in Overall's retarded group, scoring at the atypical end of the Nies-Robinson Diagnostic Index, and at the anxious pole of a principal component contrasting depressive and anxiety symptoms. A double-blind controlled trial on 176 outpatients showed that both drugs produce closely similar effects in the spectrum of patients studied. 15 references.

003249 Paykel, Eugene S.; Rowan, Peter R.; Parker, Robert R. St. George's Hospital Medical School, London, England **Effects of phenelzine and amitriptyline on depression.** Psychopharmacology Bulletin. 17(1):104-106, 1981.

A double-blind study of the effects of phenelzine and amitriptyline on depression is described. Ss in the study were 131 outpatients, aged 21 to 65, with depression or mixed anxiety depression of at least 2 week duration, and rating 7 to 11 on the Raskin Three Area Depression Scale. Preliminary results suggest that both drugs are effective first line antidepressants in outpatient neurotic depressives. Effects take 6 weeks to develop fully. The two drugs appear to have substantially similar effects which are primarily antidepressant, although phenelzine also has mild antianxiety effects. Within the spectrum of patients included, which lacked severe inpatient depressives and also pure phobic disorders, the two drugs appear to effect somewhat similar groups of patients. 5 references. (Author abstract modified)

003250 Potter, William Z.; Calil, Helena M.; Extein, Irl; Muscettola, Giovanni; Goodwin, Frederick K. Clinical Psychobiology Branch, NIMH, Bethesda, MD 20205 **Crossover study of zimelidine and desipramine in depression: evidence for amine specificity.** Psychopharmacology Bulletin. 17(1):26-29, 1981.

The effects of desmethylimipramine (DMI) and zimelidine (ZIM) on a variety of biochemical and behavioral parameters were examined in the same depressed patients. Consistent with preclinical data and pharmacokinetic findings in man, drug induced biochemical changes in the cerebrospinal fluid (CSF) showed specificity of action. DMI produced a dramatic decrease in the nonrepinephrine (NE) metabolite, 3-methoxy-4-hydroxyphenylglycol (MHPG) in CSF. ZIM had no effect on MHPG in the CSF. Conversely, ZIM reduces the serotonin (5-HT) metabolite, 5-hydroxindoleacetic acid in the CSF, while DMI did not. Results demonstrate: 1) the predicted specificity of drug action in CNS of DMI and ZIM; and 2) a dissociation of MHPG changes in CSF and urine. 12 references. (Author abstract modified)

003251 Presslich, O.; Gabriel, E.; Opgenoorth, E.; Schuster, P.; Wytek, R. Gabriel: Psychiatrische Universitatsklinik, Lazarettgasse 14, A-1097 Wien, Austria /**Statistical analyses of physiologic data from female patients with an endomorphous depressive course: a trial, interactions between physiologic parameters, test junctures in this phase.**/ Statistische Analysen physiologischen Datenmaterials von Patientinnen mit endomorph-depressiven Phasenverlaufen: ein Versuch, Wechselwirkungen zwischen physiologischen Parametern, Untersuchungszeitpunkten im Verlauf der Phase und verschiedenen. Psychiatria Clinica. 13(2):65-83, 1980.

Range corrected physiological data from the parameters of heartrate (HF), respiratory rate (AF), skin potential, and skin resistance were obtained under an acoustic activation paradigm during a longitudinal study of seven women with endomorphological depression, who were treated with thymoleptic medication. Differing levels of activation were noted from six measurements: relatively low levels at the beginning and end, and high ones during the labilization phase of treatment. The varying reactivity to the diverse examination sequences of an acoustic activation program were affected little by the degree of these changes. Patient specific characteristics were as recognizable as were the stimulus specific reactions. It is concluded that each of the parameters is appropriate for estimating different physiological variables. 5 references. (Author abstract modified)

003252 Quitkin, Frederic M.; Kane, John M.; Rifkin, Arthur; Ramos-Lorenzi, Jorge R.; Saraf, Kishore; Howard, Alfreda; Klein, Donald F. New York State Psychiatric Institute, New York, NY **Lithium and imipramine in the prophylaxis of unipolar and bipolar II depression: a prospective, placebo-controlled comparison.** Psychopharmacology Bulletin. 17(1):142-144, 1981.

The relative prophylactic efficacy of lithium alone, imipramine alone, lithium plus imipramine, and placebo in both unipolar and bipolar II patients was assessed. Forty nine patients entered the study, 27 patients with unipolar illness and 22 with bipolar II illness. A significant main effect for lithium was found in preventing depressive relapse in the unipolar sample and the combined unipolar and bipolar II groups. For the bipolar II group alone, a trend is evident favoring lithium prophylaxis. No main effect of imipramine or significant lithium/imipramine interaction was evident. 7 references. (Author abstract modified)

003253 Ranelli, Candice J.; Miller, Robert E. Dept. of Psychiatry, Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, PA 15261 **Behavioral predictors of amitriptyline response in depression.** American Journal of Psychiatry. 138(1):30-34, 1981.

The relationship between nonverbal behavior and treatment outcome with amitriptyline was examined in 18 female depressed patients and 18 age and sex matched control Ss. A behavioral analysis indicates that amitriptyline responders could be differentiated from nonresponders before drug treatment on the basis of discrete nonverbal behavior. Nonresponders showed a high frequency of body focused self-adaptors, posture shifts, and pauses, and a low frequency of smiles; while responders displayed long speech pauses and long durations of head aversion. 31 references. (Author abstract).

003254 Rickels, Karl; Case, W. George; Werblowsky, Joshua; Csanalosi, Irma; Schless, Arthur; Weise, Charles C. 203 Piersol Bldg., University Hospital, 3400 Spruce Street, G1, Philadelphia, PA 19104 **Amoxapine and imipramine in the treatment of depressed outpatients: a controlled study.** American Journal of Psychiatry. 138(1):20-24, 1981.

In a double-blind controlled study, 158 outpatients with unipolar depression were treated for 6 weeks with amoxapine, imipramine, or placebo to assess the antidepressant effects of the new dibenzooxazepine compound, amoxapine. Of Ss, 45 amoxazepine, 43 imipramine, and 27 placebo patients completed at least 4 weeks of treatment. Active drugs produced significantly more improvement at treatment endpoint according to several physician rated measures, but patient rated measures failed to differentiate among treatments. Both active drugs, at doses up to 200mg, produced an equal amount of moderate and marked global improvement, and both produced significantly more side-effects than did placebo. 16 references. (Author abstract)

003255 Risch, Samuel C.; Cohen, Robert M.; Janowsky, David S.; Kalin, Ned H.; Sitaram, N.; Gillin, J. Christian; Murphy, Dennis L. Clinical Neuropharmacology Branch, NIMH, NIH Clinical Center, 10/3D41, Bethesda, MD 20205 **Physostigmine induction of depressive symptomatology in normal human subjects.** Psychiatry Research. 4(1):89-94, 1981.

Nine normal volunteers, screened for the absence of a personal or family history of affective disorders, and free of concurrent marihuana usage, received intravenous infusions of high dose physostigmine or saline in a randomized, double-blind counterbalanced paradigm. Self-rating and observer ratings both demonstrated a statistically significant, physostigmine associated increase in depressive type symptoms in the group as a whole, particularly pronounced in certain individuals. These results are the first report of physostigmine associated depressive symptomatology in normal subjects. While the ratings are discrepant with two previous studies, the use of multiple self-ratings and some differences in physostigmine dosage and infusion times might have contributed to this difference. These findings suggest that high dose physostigmine may represent a pharmacological model of depression in normal subjects, or alternatively may be diagnostic of vulnerability to affective disorder in certain subjects free of a previous history of affective disturbances. 13 references. (Author abstract)

003256 Rounsaville, Bruce J.; Klerman, Gerald L.; Weissman, Myrna M. Substance Abuse Treatment Unit, Connecticut Mental Health Center, 100 Park St., New Haven, CT 96511 **Do psychotherapy and pharmacotherapy for depression conflict? Empirical evidence from a clinical trial.** Archives of General Psychiatry. 38(1):24-29, 1981.

Six hypotheses about negative interactions between pharmacotherapy and psychotherapy are evaluated on the basis of data derived from a clinical trial of psychotherapy and tricyclic antidepressants alone and in combination as treatment for ambulatory depression. These hypotheses are: 1) the negative placebo effect; 2) drug induced reduction of symptoms reduces motive for continuing psychotherapy; 3) pharmacotherapy undercuts defenses; 4) deleterious effects of pharmacotherapy on psychotherapy expectations; 5) psychotherapy may be symptomatically disruptive; and 6) biochemical replacement effect of drugs. None of the hypotheses was supported by the data. As has been shown in other reports the combination of treatments was more effective than either treatment alone. 17 references. (Author abstract modified)

003257 Rush, A. John; Watkins, John T. Dept. of Psychiatry, Southwestern Medical School, 5323 Harry Hines Blvd., Dallas, TX 75235 **Group versus individual cognitive therapy: a pilot study.** Cognitive Therapy and Research. 5(1):95-103, 1981.

Outcome in group versus individual cognitive therapy was assessed, along with the effects of antidepressant medication on attendance and outcome in 44 depressed Ss. Contrary to expectations, the efficacy of group therapy was not as great as individual treatment (with or without medication), as measured by the Beck Depression Inventory. The Hamilton Rating Scale for Depression (HRS-D) on a subsample did not, however, result in between groups differences at posttreatment. The addition of medication to individual therapy did not significantly reduce end of treatment symptom levels in this small sample. The symptom response pattern during active treatment suggests that group therapy initially produces as rapid symptom reduction as do other treatments, but a less complete response is evident at the end of treatment. 22 references.

003258 Sebastiani, G. Cattedra di Clinica Psichiatrica II, Universita di Bari, Bari, Italy /**Lithium uptake in red cells of cycloid and unipolar dysthymic patients.**/ Captazione del litio nei globuli rossi di pazienti con psicosi cicloide e distimia unipolare. Rivista Sperimentale di Freniatria. 103(2):375-379, 1979.

Lithium uptake in red cells was studied in 32 patients with affective disorders, psychosis, and depression. The sample consisted of 18 men and 14 women, between ages 40 and 70, who had not received previous lithium therapy. A control group also was established with 19 healthy volunteers. The lithium red blood cell and plasma ratio was estimated in vitro at different times throughout the experiment. Since no significant differences in lithium ratio were found between controls and either of the diagnostic groups, it is concluded that no differences in the rate of uptake of lithium into red blood cells exist between controls and cycloid psychotics or unipolar depressives. 13 references. (Journal abstract modified)

003259 Sharma, Shridhar; Hegde, Rajendra. Dept. of Psychiatry and Human Behaviour, Goa Medical College, Panaji, Goa, 403 001, India **Therapeutic efficacy of doxepin in divided and single dose regime.** Indian Journal of Psychiatry. 22(3):283-287, 1980.

The effect of doxepin hydrochloride on depression was examined in 38 patients suffering from depression as a primary illness. Patients were randomly allocated to either a three times daily dosage group or a single nocturnal dose group with no attempt to make the sexes equal in the sampling. In 11 patients symptoms were cleared, 22 showed marked improvement, 4 showed moderate improvement, 1 showed slight improvement, and in 1 there was no improvement. Divided and single dosage regimens did not cause any differences in therapeutic effectiveness nor was there a significant difference in the incidence of side-effects. It is concluded that the single nocturnal dosage of doxepin is well tolerated and is as effective as the thrice daily dosage schedule. 14 references.

003260 Siomoupoulos, V. Inpatient Psychiatric Unit, Ravenswood Hospital Medical Center, 1931 W. Wilson, Chicago, IL 60640 **Is mania overdiagnosed?: the three common pitfalls in diagnosing manic-depressive illness.** Behavioral Medicine. 8(3):21-23, 1981.

Three common pitfalls in the misdiagnosis of manic-depressive illness and/or inappropriate lithium treatment are discussed. Popular media publicizing of lithium as a miracle drug for eliminating manic-depressive mood swings has contributed to requests for lithium therapy by patients with ups and downs associated with hysterical personality. Because grandiosity, hyperactivity, and pressured speech are symptoms common to both the manic and the excited paranoid schizophrenic patient, it is not uncommon to find this type of paranoid schizophrenic receiving lithium therapy because of misdiagnosis. The therapeutically overzealous psychiatrist may prescribe lithium for the functioning hypomanic patient whose episodes characteristically are rare, mild, and tend to dissipate without treatment. The features of hysterical personality, paranoid schizophrenia, and mild hypomania, coupled with a positive placebo effect can mislead the psychiatrist into prescribing unwarranted lithium treatment. Lithium side-effects are presented in tabular form. 4 references.

003261 Soucek, K.; Zvolsky, P. Ke Karlovu 11, 128 02 Praha 2, Czechoslovakia **/Lithium in 1978./** Lithium v roce 1978. Ceskoslovenska Psychiatrie. 75(5):363-368, 1979.

Basic research and clinical research in 1978 concerning lithium salts are surveyed. The knowledge about the transportation system of lithium has expanded, but the research has also become very complicated. Fieve and associates studied the kinetics of the eflux of lithium from erythrocytes and found that there is no connection between the plasma level, the doses of lithium, and the result of prophylaxis. It is concluded that lithium is not effective in the treatment of schizophrenia, acute exacerbations of schizoaffective psychoses, acute depression, anxiety, abuse of opiates, periodic hyperkalemic paralysis, and the hyperkinetic syndrome. 26 references.

003262 Stewart, Jonathan W.; Quitkin, Frederic; Liebowitz, Michael R.; McGrath, Patrick J.; Klein, Donald F. New York State Psychiatric Institute, New York, NY **Efficacy of desipramine in mildly depressed patients: a double-blind, placebo-controlled trial.** Psychopharmacology Bulletin. 17(1):136-138, 1981.

A double-blind, placebo controlled trial of the efficacy of desipramine in mildly depressed patients is described. The desipramine and placebo response rates in these mildly depressed patients approach tricyclic antidepressant (TCA) and placebo response rates usually quoted for moderately to severely depressed patients. Thus, severity of illness may not be a useful criterion for predicting the utility of TCA. Since persistence of dysphoric mood is required for a diagnosis of major depressive disorder and precludes a diagnosis of intermittent depressive disorder, these data suggest that persistence of dysphoric mood may be a more useful indication for TCA use than severity of illness. 11 references.

003263 Straumanis, John J., Jr.; Shagass, Charles; Roemer, Richard A.; Mendels, Joseph; Ramsey, T. Alan. Temple University Medical Center, Philadelphia, PA **Cerebral evoked potential changes produced by treatment with lithium carbonate.** Biological Psychiatry. 16(2):113-129, 1981.

The evoked potential (EP) changes of 12 depressive patients were studied while they were on placebo and on therapeutic doses of lithium carbonate (Li). Li produced a number of amplitude changes in EPs of all sensory modalities, while there were few latency changes; in general, amplitudes of positive components were increased, while negative component amplitudes were reduced. Spatial distributions of EP peaks were mainly unaltered. The amount of EP amplitude change with Li tended to be correlated with plasma and erythrocyte Li levels. No convincing correlations were found between alterations in EPs and depression ratings. The findings indicate that Li produces more widespread CNS changes than suggested by previous reports; it appears that these tend to be related to Li levels, but not to the therapeutic effects of Li. 32 references. (Author abstract modified)

003264 Svestka, J.; Nahunek, K.; Ceskova, E.; Rysanek, R. Psychiatricka Klinika FNsP, Jihlavska 102, 657 15 Brno-Bohunice, Czechoslovakia **/Therapeutic effect of mianserine and imipramine in endogenous depressions (controlled comparison)./** Lecebny ucinek mianserinu a imipraminu u endogennich depresi (kontrolovane srovnani). Ceskoslovenska Psychiatrie. 75(5):316-323, 1979.

Two antidepressants, mianserine and imipramine, were used in a double-blind study of 82 cases of hospitalized patients suffering from endogenous depression. The subjects treated with mianserine showed a significantly smaller number of complete remissions and discharges from hospital. In those cases where it was possible to make individual comparisons, the treatment with imipramine produced better results in nine cases, the same results in six cases. The validity of the finding was affected by the fact that most of the patients compared individually were treated with imipramine after they had been treated unsuccessfully with mianserine. Side-effects of the anticholinergic type were significantly less frequent when mianserine was used. 8 references. (Author abstract modified)

003265 Symonds, Richard L.; Williams, Paul. Williams: Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, England **Lithium and the changing incidence of mania.** Psychological Medicine. 11(1):193-196, 1981.

The effect of lithium containing compounds on admission rates of mania patients in England was studied to hospitals using hospital admission data for 1970 to 1975. For males but not for females, there was a decrease in the proportion of all new admissions given a diagnosis of mania between 1970 to 1971. However, from 1971 to 1975, years which saw large increases in lithium prescription, mania admissions increased (relative to all admissions). A similar picture was exhibited by male readmissions: the proportion of all readmissions given a diagnosis of mania decreased from 1970 to 1972, and increased thereafter. For female readmissions, however, there was a trend of increase in mania admissions, both absolute and relative, across the time period. Possible explanations for the findings are proposed. 6 references. (Author abstract modified)

003266 Tanimoto, Kenji; Maeda, Kiyoshi; Yamaguchi, Naohiko; Chihara, Kazuo; Fujita, Takuo. Dept. of Psychiatry, Kobe University School of Medicine, 7 Kusunoki-cho Ikuta-ku, Kobe

650, Japan **Effect of lithium on prolactin responses to thyrotropin releasing hormone in patients with manic state.** Psychopharmacology. 72(2):129-133, 1981.

Plasma thyrotropin (TSH) and prolactin (PRL) responses to thyrotropin releasing hormone (TRH) were studied before and during lithium treatment for 3 to 4 weeks in six patients with manic states and eight control Ss. Lithium administration did not alter nonstimulated secretion of TSH in any groups, but resulted in exaggerated responses of plasma TSH to TRH in both groups. No difference between the two groups was observed before lithium treatment or in plasma TSH responses to TRH during lithium treatment. The observed augmented responses of plasma PRL to TRH in patients with manic states suggest the existence of some abnormality in the hypothalamo/pituitary axis. Results are discussed in relation to the hypothesized mechanisms by which lithium affects manic symptoms. 27 references. (Author abstract modified)

003267 Vacek, J. Poliklinika OUNZ, 360 66 Karlovy Vary, Czechoslovakia **/Confession of a melancholiac: contribution to the problem of prophylaxis of manic-depressive psychosis using lithium./** Zpoved melancholika: prispevek k problemu profylaxe maniodepresivni psychozy soli lithia. Prakticky Lekar. 59(19-20):738-740, 1979.

A patient suffering from manic-depressive psychosis was treated with daily doses of lithium salts over a 3 year period. His mental state eventually was stabilized. The patient gave a detailed description of his experience during the treatment and during the process of recovery in personal letters, parts of which are presented. These letters illustrate the deep changes taking place in the patient's mind during these 3 years, and they provide valuable information about the subjective feelings and observations of a patient suffering from endogenous depression.

003268 Van Houtte, J. P.; Horwitz, Monique; Becu, Roland; Delarue, Michel; Domengie, Bernard; Lupczynski, Georges. Hospitalo-Universitaire de Sante Mentale et de Therapeutique, 100-102, rue de la Sante, F-75673 Paris Cedex 14, France **/The treatment of depression using clomipramine in general medical practice: 48 cases treated on an outpatient basis./** Traitement des etats depressifs par la clomipramine dans la pratique de medecine generale: a propos de 48 observations traitees en cure ambulatoire. Psychologie Medicale. 12(7):1561-1576, 1980.

The treatment of outpatient cases of depression with clomipramine was studied. The drug was administered to 48 patients suffering from depression. Dosages averaged between 75mg and 100mg daily; the duration varied depending on results, tolerance, and the need to prolong treatment. Results show that reactive depressions responded the best, with 90% reporting good or very good results. Clinical tolerance was good; side-effects were modified or reduced. 218 references. (Journal abstract modified)

003269 van Praag, Herman M. Psychiatric University Clinic, University of Utrecht, Utrecht, The Netherlands **Management of depression with serotonin precursors.** Biological Psychiatry. 16(3):291-310, 1981.

An overview is presented of management of depression with 5-hydroxytryptamine (5-HT, serotonin) precursors. The 5-HT hypothesis of pathogenesis in depression is examined within the context of the background of 5-HT treatment. The justification of the 5-HT precursor strategy, which aims to increase the availability of 5-HT in the brain, is outlined; and a summary of early studies of the effects of 5-hydroxytryptophan (5-HTP) treatment in depressed and normal Ss are summarized. Although the number of studies comparing 5-HTP with placebo or standard antidepressants is still small, results indicate that 5-HTP has antidepressant properties and that the 5-HTP/clomipramine combination is superior in effect than either compound alone. Results of tryptophan studies have been less unequivocal than those of 5-HTP studies, tryptophan being found effective in only five of ten double-blind comparative studies, possibly as a result of pharmacokinetic factors. 91 references.

003270 Versiani, Marcio. Av. N. S. de Copacabana, 1133, conj. 1303, 22070, Rio de Janeiro, Brazil **/Therapeutics (I) -- pharmacological treatment of depressions./** Terapeutica (I) -- o tratamento farmacologico das depressoes. Jornal Brasileiro de Psiquiatria. 28(1-4):17-22, 1979.

The therapeutic management of depressive states is examined. The mechanism of action of antidepressants seems to be related to the neurotransmitters. Antidepressants favorably affect psychotic depression. In other depressions antidepressants are not effective and may even aggravate symptoms. Tricyclic antidepressants remain in the body up to 3 days, are potent anticholinergic agents, and should be prescribed in dosages beween 75 and 250mg/day. Dosages should be smaller in children and the elderly, since their less effective metabolism can cause lethal intoxication. Monoamine oxidase inhibitors have been used by some researchers to treat neurotic depression, but there is still no real scientific basis for this therapy. 28 references. (Journal abstract modified)

003271 Watanabe, Shosuke; Yokoyama, Shigeo; Kubo, Shinsuke; Iwai, Hiroyuki; Kuyama, Chie. Dept. of Psychiatry, Kawasaki Medical School, Kurashiki, Japan **Relationship between blood concentrations and clinical effects of a new antidepressant** Folia Psychiatrica et Neurologica Japonica. 34(2):147-156, 1980.

In the course of a double-blind controlled study of antidepressants, observations were carried out on the relationship between maprotiline/desmethylmaprotiline concentrations in blood and antidepressive effects, the doses, and the incidence of side-effects. The maprotiline concentration in the effective group (markedly improved and moderately improved) was 306.9 plus or minus 112.9ng/ml and 244.4 plus or minus 43ng/ml in the non-effective group (slightly improved, unchanged, or aggravated). There was no statistically significant difference between the groups. Correlations of the maprotiline concentrations in blood, and together with desmethylmaprotiline concentrations, with variation rates in Hamilton depression scores show a tendency toward higher concentrations in blood with higher therapeutic responses. Side-effects were observed in all patients with blood concentrations higher than the mean value (265.2ng/ml). 14 references. (Author abstract)

003272 Weissman, Myrna M.; Klerman, Gerald L.; Prusoff, Brigitte A.; Sholomskas, Diane; Padian, Nancy. Yale University School of Medicine, Suite 2A, 904 Howard St., New Haven, CT 06519 **Depressed outpatients: results one year after treatment with drugs and/or interpersonal psychotherapy.** Archives of General Psychiatry. 38(1):51-55, 1981.

A 1 year followup was conducted on ambulatory nonbipolar, nonpsychotic, acutely depressed patients who received amitriptyline hydrochloride and/or interpersonal psychotherapy (IPT), each alone and in combination, as part of a 4 month clinical trial. There were no differential long-term effects of the initially randomized treatment on clinical symptoms 1 year later, since most of the patients were asymptomatic. While most patients were functioning reasonably well, there were some main effects of IPT on social functioning at the 1 year followup. Patients who received IPT with or without pharmacotherapy were doing significantly better on some measures of social functioning. 20 references. (Author abstract)

003273 White, Kerrin. University of Southern Caifornia School of Medicine, Dept. of Psychiatry and the Behavioral Sciences, Los Angeles, CA **The benefits and risks of combining an MAO inhibitor and a tricyclic antidepressant.** Psychopharmacology Bulletin. 17(1):106-107, 1981.

A pilot study concerning the benefits and risks of combining a monoamine oxidase (MAO) inhibitor (tranylcypromine) and a tricyclic antidepressant (amitriptyline) is described. Thirty depressed inpatients were randomly assigned to treatment with either drug alone or in combination (at half dosages of each). No significant differences in therapeutic efficacy or frequency of side-effects were found among the treatment groups. These findings seem consistent with the body of literature on the combination, which has appeared relatively safe when used in a recommended manner, but without any convincing evidence for therapeutic advantage. 8 references. (Author abstract modified)

10 DRUG TRIALS IN NEUROSES

003274 Ban, Thomas A. Tennessee Neuropsychiatric Institute, 1501 Murfreesboro Road, Nashville, TN 37217 **Psychopharmacology of neuroses.** Psychosomatics. 22(1):55, 58-60, 1981.

A number of neurotic disorders are reviewed with regard to the effectiveness of various classes of psychopharmacologic agents and the current understanding of the pharmacologic basis for their therapeutic effects. These disorders include generalized anxiety disorders, panic disorders, obsessive-compulsive disorders, the phobic anxiety depersonalization syndrome, depressive neurosis, and psychophysiologic disorders. Drugs used in these disorders include sedatives, tricyclic antidepressants, and monoamine oxidase inhibitors. 19 references. (Author abstract modified)

003275 Bunney, William E., Jr. Biological Psychiatry Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20014 **/Recent advances in the diagnosis and treatment of anxiety disorders./** Introduction. Psychiatric Annals. 11(1):7, 1981.

Recent advances in the diagnoses and treatment of severe anxiety disorders are noted. Useful diagnostic categories in the areas of anxiety disorders have been defined in the new edition (third) of the Diagnostic and Statistical Manual of Mental Disorders; these categories have become increasingly meaningful because of the differential and increasingly successful response of some of these disorders to pharmacological agents such as monoamine oxidase inhibitors, tricyclic compounds, benzodiazepines, and propranolol. The discovery of benzodiazepine receptors in human brain may contribute to greater understanding of the action of these compounds and may eventually lead to the identification of a naturally occurring anxiety or antianxiety compound produced within the brain that may play an important role in mediating behavioral symptoms of anxiety.

003276 Bunney, William E., Jr. Biological Psychiatry Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20014 **Current biologic strategies for anxiety.** Psychiatric Annals. 11(1):21,24-25,28-29, 1981.

A review of recent biological research into the mode of action of pharmacologic agents that effect human anxiety is presented. Areas reviewed inlclude: the recent discovery of receptors in the human brain for the most effective of the anxiolytic compounds, benzodiazepines; information concerning the action of benzodiazepines, specifically the role of GABA; the criteria for an endogenous benzodiazepine and some proposed endogenous compounds; and the possible role of the locus coruleus in anxiety. Some earlier data concerning the role of sodium lactate in producing anxiety like symptoms are also summarized. Advances on several fronts provide reason to hope that new understanding of the causes, prevention, and treatment of anxiety will soon be forthcoming. 37 references.

003277 Cohen, Neal L.; Alpert, Murray; Friedhoff, Arnold J. New York University Medical Center, New York, NY 10016 **Clinical trial of halazepam and clorazepate: considerations of a single bedtime dose.** Psychopharmacology Bulletin. 17(1):134-135, 1981.

The efficacy of halazepam in a single bedtime dose was compared with clorazepate and placebo in the treatment of patients with symptoms of anxiety and tension, whether or not accompanied by somatization and/or mild depression. At the end of the first week of treatment, significant differences favoring both drug groups over placebo were found on physician rated measures of efficacy, including global assessments, relative improvement, and Hamilton Anxiety Scales. These significant differences favoring either drug over placebo persisted throughout the 4 week study. Patient rated global assessments, however, did not discriminate well between drug and placebo groups. Advantages of one a day bedtime dosaging are discussed. 1 reference.

003278 Frank, Linda Ann. Fielding Institute **Comparison of anxiety reducing substances. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3176-B, 1981. Ann Arbor, Univ. Microfilms No. 8103055, 68p., 1980.

Diazepam, Valerian, and placebo were compared with respect to the reduction of anxiety. A daily global scale showed that subjects felt significantly better while taking diazepam than while taking placebo. There was no significant difference between the effects of diazepam and Valerian or between Valerian and placebo. Valerian was found to be significantly different from diazepam and placebo with respect to anxiety reduction, and the effets of Valerian on general well-being did not differ significantly from those of placebo. It is suggested that the process of obtaining more information regarding the existence and effect of psychoactive properties in Valerian would require studies in which the subjects take larger doses of Valerian for a longer period of time. (Journal abstract modified)

003279 Hervy, C. C.H.U., Limoges, France **/Clinical trials with clobazam in geriatrics./** Essais cliniques du clobazam en geriatrie. Revue de Geriatrie. 5(4):201-203, 1980.

The use of clobazam in the treatment of anxiety in the elderly was investigated. Clobazam was administered to 30 Ss (25 women and 5 men) over age 67, in doses of 10mg for 1 to 3 months, depending on the S. Results show that 75% of the Ss benefitted from this therapy with an important lasting improvement. Tolerance was good, but vigilance disturbances and secondary effects were common among the elderly during drug treatment; therefore, precautions are essential.

003280 Kessler, Kenneth A. Section on Psychopharmacology, Psychiatric Institute, Washington, DC **Drug treatment of the phobic-anxiety syndrome.** Psychiatric Annals. 11(1):41,45-48, 1981.

Drug treatment of phobic anxiety syndrome is examined in a review of the relevant research literature. One of the earliest reported uses of drug treatment for phobic anxiety was Dally's (1958) treatment of patients with mild depressive states with anxiety features using the monoamine oxidase inhibitor (MAOI), iproniazid. In a 1962 study, Sargent and Dally reported marked improvement in 74% of a sample of 245 phobics treated with an MAOI, and Klein (1962) found equally favorable results with tricyclics. The results of these seminal studies have subsequently been confirmed by others, and both MAOIs and tricyclics are now generally accepted as being effective treatments for phobic

anxiety disorders. Beta blockers, such as propranolol, may also play a limited role in the management of phobias, specifically, in alleviating the physical symptoms that accompany anxiety attacks. There is now a substantial body of literature reporting 40% to 50% complete remission of phobic anxiety syndrome treated with MAOIs; phenelzine is generally the drug of choice. Tricyclics, particularly chlorpromazine, have been found equally effective. Clinical outcome is improved when either of these drugs are supplemented by behavior therapy to overcome the phobic avoidance and benzodiazepines to minimize anticipatory anxiety. 31 references. (Author abstract modified)

003281 Leme-Lopes, J. Rua Dona Mariana, 53, ap. 1.401, Rio de Janeiro, Brazil **/Changes in the psychopathology of psychosis due to neuroleptic treatment./** Mudanca da psicopatologia das psicoses sob a acao dos neurolepticos. Jornal Brasileiro de Psiquiatria. 28(1-4):1-6, 1979.

The role of neuroleptics in the transformation of the psychopathology of schizophrenic psychosis is discussed. The effects of neuroleptics can be summarized in five categories: sedative, sleep/awake continuum, antimaniacal, antipsychotic, and neurologic. Neuroleptics are effective therapeutic agents for delusions and hallucinations. Autism and emotional insensibility are not influenced by the same doses and therapeutic schedules used for delusional and hallucinatory states. It is concluded that the change in the psychopathology of psychosis can be observed best in neuroleptic treatment. 26 references. (Journal abstract modified)

003282 McNair, Douglas M. Boston University, School of Medicine, Boston, MA 02118 **Methodology of outpatient drug research. (Unpublished paper).** Final Report, NIMH Grant R01-MH-27452, 1980. 11 p.

Data from three clinical trials -- symptomatic volunteers (SVs) from a general population, SVs from a student population, and college student psychiatric patients -- were examined to determine: 1) pharmacotherapy of anxiety and depression in SVs; 2) pharmacotherapy of phobic anxiety in SVs; and 3) pharmacotherapy of anxiety in student patients and student SVs. Benzodiazepine, imipramine, and placebo are compared for anxiety and depression; and chlordiazepoxide and imipramine are compared for agoraphobia. The data show that anxiety, placebo plus psychotherapy was clearly and significantly superior to the administration of chlordiazepoxide plus psychotherapy across many criteria. 19 references.

003283 Rees, Linford; (Saiz-Ruiz, J.; Valbuena, A., translators). St. Bartholomew's Hospital, London, England **/Treatment of anxiety states./** Tratamiento de los estados de ansiedad. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(2):5-10, 1980.

The treatment of anxiety syndromes is discussed. Three forms of treatment have proved useful: pharmacotherapy, biofeedback, and behavioral therapy. The most prominent treatment is pharmacotherapy, using the following drugs: barbiturates, carbamates, clormezanone, clormetiazol, beta-blockers, neuroleptics, tricyclic antidepressants, monoamine oxidase inhibitors, and benzodiazepines. The differences between various benzodiazepines are discussed in detail. It is concluded that the use of drugs is an important method in the treatment of anxiety conditions. 4 references.

003284 Shader, Richard I.; Greenblatt, David J.; Ciraulo, Dominic A. Dept. of Psychiatry, Tufts University School of Medicine, Boston, MA **Benzodiazepine treatment of specific anxiety states.** Psychiatric Annals. 11(1):30, 37-40, 1981.

A classification system of anxiety states is presented to provide a rational basis for pharmacological treatment. Although there is considerable overlap and anxiety patterns may coexist, anxiety states may be divided into eight subtypes: 1) situational anxiety which is often helped by treatment with a short acting benzodiazepine, such as lorazepam or oxazepam, in conjunction with psychotherapy or behavior modification; 2) free floating anxiety, longer acting benzodiazepines (diazepam, chlordiazepoxide, clorazepate, prazepam) may be indicated, although insight oriented psychotherapy may be needed for definite relief; 3) and 4) phobic and anticipatory anxiety, benzodiazepines may be helpful in anticipatory anxiety, but imipramine or phenelzine may also be needed to treat phobic anxiety, possibly in conjunction with desensitization; 5) anxiety with depression, which is often best treated with a sedating antidepressant such as amitriptyline or doxepin, although masked or atypical depressions may respond best to a monoamine oxidase inhibitor; 6) traumatic anxiety, such as may be seen as part of stress disorders, and which may require a total treatment approach including short-term prescription of benzodiazepines; 7) anxiety secondary to medication and medical conditions; and 8) psychotic terror.

003285 Solyom, C.; Solyom, L.; LaPierre, Y.; Pecknold, J.; Morton, L. Shaughnessy Hospital, Vancouver, British Columbia, Canada **Phenelzine and exposure in the treatment of phobias.** Biological Psychiatry. 16(3):239-247, 1981.

A double-blind study was carried out on 40 agoraphobic and socially phobic patients, matched and then randomly assigned to one of four treatment groups: phenelzine-exposure, phenelzine-no exposue, placebo-exposure, placebo-no exposure. Exposure consisted of encouraging the patient to face the phobic situation a predetermined number of times. Assessments made at the beginning and end of 8 weeks of therapy and 8 weeks thereafter, show that the phobia ratings of groups decreased significantly. The combined exposure group improved significantly more than the combined no exposure group during treatment. At 8 week followup, there was some deterioration in the phenelzine-exposure and palcebo-no exposure groups. Exposure, with or without phenelzine, was the superior treatment modality. The antiphobic effect of phenelzine was not supported, although it seemed to reduce subjective anxiety during exposure experiences. The possibility that effect of phenelzine is dose related is discussed. 16 references. (Author abstract)

003286 Stahl, Stephen M.; Berger, Philip A. Stanford Mental Health Clinical Research Center, Dept. of Psychiatry and Behavioral Sciences, School of Medicine, Stanford, CA 94305 **Physostigmine in Tourette syndrome: evidence for cholinergic underactivity.** American Journal of Psychiatry. 138(2):240-242, 1981.

Improvement in Tourette syndrome symptoms following physostigmine administration in a double-blind, placebo controlled investigation with six male patients is reported. The findings support the hypothesis that Tourette syndrome is characterized not only by a relative excess of central dopaminergic activity, but also by a relative deficiency in central cholinergic activity. This is consistent with the concept that the pathophysiology of hyperkinetic movement disorders is based on an imbalance in central dopamine-acetylcholine neuronal activities. Implications for the clinical treatment of Tourette syndrome are discussed, especially as related to use of the neuroleptic, haloperidol, which has unacceptable side-eefects in dosages that control tics and can produce permanent tardive dyskinesia. 10 references.

003287 van der Velde, Christiaan D. Abraham Ribicoff Research Center, P.O. Box 508, Norwich, CT **Maprotiline versus imipramine and placebo in neurotic depression.** Journal of Clinical Psychiatry. 42(4):138-141, 1981.

The antidepressant effect of maprotiline, a tetracyclic compound, was compared with that of imipramine in a 4 week, double-blind, placebo controlled study with neurotic depressives. On all factors of the Hamilton Depression Rating Scale and on most items of the Zung Self-Rating Scales for Depression and Anxiety, maprotiline appeared slightly more effective than did imipramine and showed a faster onset of action. In addition maprotiline appeared to cause fewer anticholinergic side-effects. 10 references. (Author abstract)

11 DRUG TRIALS IN MISCELLANEOUS DIAGNOSTIC GROUPS

003288 Asam, Uta; Karrasz, W. Abt. fur Kinder- und Jugendpsychiatrie, Universitat Hamburg, Martinistrasse 52, D-2000 Hamburg 20, West Germany **/Child psychiatry and psychopharmacotherapy in general practice, in pediatrics, and in neurology./** Allgemein-, kinder- und nervenarztlichen Praxis. Zeitschrift fur Kinder- und Jugendpsychiatrie. 7(3):221-231, 1979.

A questionnaire was used to obtain information from 270 general practitioners, pediatricians, and neurologists in Hamburg about their child psychiatric work. Analysis of the responses shows that pediatricians in particular treat many children with psychiatric problems. A third of these children are given psychotropic drugs. A comparable study planned for all of West Germany did not materialize. 6 references. (Journal abstract modified)

003289 Avanesova, T. S.; Sviridova, Ye. I. Tsentral'nyy NII sudebnoy psikhiatrii imeni prof. Serbskogo, Moskva, USSR / **The therapeutic activity of tryptophan and its effect on serotonin metabolism in epileptic patients./** Terapevticheskaya aktivnost' triptofana i yego vliyaniye na obmen serotonina u bol'nykh epilepsiyey. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):857-863, 1980.

The therapeutic effects of tryptophan were studied in a group of 24 epileptic patients of various ages and durations of illness. The patients were given dosages of .25g of tryptophan three times daily. As a result, a decreased initial level of serotonin was noted in the patients, particularly in those with frequent epileptic seizures and with a long history of the disorder. After as little as a week of its administration, the tryptophan began to produce a reliable increase in the serotonin level as well as positive changes in the clinical picture. These effects were especially notable in patients with grand-mal seizures and with personality disorders. 14 references. (Journal abstract modified)

003290 Baratz, Robin; Mesulam, Marek-Marsel. Behavioral Neurology Unit, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215 **Adult-onset stuttering treated with anticonvulsants.** Archives of Neurology. 38(2):132, 1981.

A case report is presented in which stuttering and aphasia emerged as salient clinical features in an adult with multifocal brain damage and paroxysmal EEG activity. In addition, this patient had a bilaterally abnormal EEG with notable paroxysmal discharges in the left temporal region. Anticonvulsant treatment was associated with reversal of the stuttering and with marked improvement in language abilities. Even though the patient had structure, the abnormality in the EEG still appeared to have significant implications in terms of therapy since the stuttering responded to anticonvulsant medications. 8 references. (Author abstract modified)

003291 Barthelemy, C.; Garreau, B.; Leddet, I.; Sauvage, D.; Domenech, J.; Muh, J. P.; Lelord, G. Service d'Explorations Fonctionnelles Psychopathologiques, C.H.U. Bretonneau, F-37044 Tours Cedex, France **/The biological and clinical effects of oral magnesium and associated magnesium-vitamin B6 administration on certain disorders observed in infantile autism./** Effets cliniques et biologiques de l'administration orale du magnesium seul ou du magnesium associe a la vitamine B6 sur certains troubles observes dans l'autisme infantile. Therapie. 35(5):627-632, 1980.

Two sequentially crossed double-blind therapeutic trials were performed using 37 severely autistic children 4 to 15 years old. In Experiment 1 with 21 children, magnesium/vitamin B6 (B6-Mg) was tested against placebo. In Experiment 2 with 16 children B6-Mg was tested against magnesium Mg alone. The therapeutic effects observed were evaluated using quantitative clinical scales. Urinary titers of homovanillic acid (H.V.A.) were assayed before, during, and after treatment and compared with urinary H.V.A. levels of normal children of the same age who acted as controls. The clinical results confirmed a moderate therapeutic action of the B6-Mg association. The effects of Mg administered alone were comparable to those obtained with associated B6-MG. Urinary H.V.A. levels were initially higher in the autistic children than in the control group of children. Treatment with the B6-Mg association decreased urinary H.V.A. in the autistic group. An identical effect was observed in the children treated with Mg alone. 22 references. (Journal abstract)

003292 Bernstein, Jerold G. Dept. of Psychiatry, Harvard Medical School, Boston, MA 02115 **/Reflections on antipsychotic chemotherapy: the beginning of pharmacological treatment./** Reflexiones sobre la quimioterapia antipsicotica: el comienzo del tratamiento farmacologico. Acta Psiquiatrica y Psicologica de America Latina. 26(3):248-255, 1980.

An interview concerning the use of antipsychotic drug treatment of schizophrenic, manic-depressive, psychotic depressive, and chronically anxious patients is presented. The psychiatrist must find out as much as possible about the patient's possible reaction to the drug and any family antecedents involving the use of the drug. Symptoms, age, behavior, medical complications, and possible side-effects must be considered. Often, the best drug is found through a process of trial and error. Dosage may vary radically from patient to patient. Most patients cooperate best when they are told to take only one dosage daily. The use of drugs has made the treatment of the psychotic within the community more common than lengthy periods of hospitalization.

003293 Bobon, D. P.; Detaille, J.; Leunen, A.; Born-Leveque, M. Clinique psychiatrique universitaire, Rue Saint-Laurent 58, B-4000 Liege, Belgium **/Alcohol withdrawal using tiapride: quantitative psychopathology./** Le sevrage ethylique par tiapride: psychopathologie quantitative. Acta Psychiatrica Belgica. 80(2):156-162, 1980.

The alcoholic's psychological status during treatment with tiapride was studied. Nineteen hospitalized male alcoholics were administered 400mg three times daily of tiapride during the first 4 days of alcohol withdrawal and 300mg orally during the following 10 days. The majority of the alcoholics demonstrated improvement in withdrawal related disturbances. Results confirm the rapidity of tiapride's action as well as its efficiency and harmlessness at the prescribed dosage. The drug was better tolerated than the usual neuroleptics and involved smaller potential risks of substitutive drug addiction than the anxiolytic drugs or paraldehyde. 6 references. (Journal abstract modified)

003294 Bobruff, Arthur; Gardos, George; Tarsy, Daniel; Rapkin, Robert M.; Cole, Jonathan O.; Moore, Patricia. 70 Crestwood Rd., West Newton, MA 02165 **Clonazepam and phenobarbital in tardive dyskinesia.** American Journal of Psychiatry. 138(2):189-193, 1981.

A controlled study investigated clonazepam versus the active placebo of phenobarbital in 21 psychiatric patients with tardive dyskinesia to determine advantages of benzodiazepines over other antidyskinetic drugs. Both drugs significantly reduced dyskinetic movements. Clonazepam had a stronger effect on orofacial dyskinesia, and phenobarbital was more effective for limbs and axial movements. Clonazepam was also more effective for drug free Ss and those receiving low doses of neuroleptics than for all patients given phenobarbital and for clonazepam patients taking high doses of neuroleptics. It is suggested that future treatment studies focus on the effects of antidyskinetic drugs on distinct body regions. 19 references. (Author abstract modified)

003295 Bocci, U.; Beretta, G. Ospedale Psichiatrico, Castiglione delle Stiviere (Mantova) Italy **/Hypnotic action of flunitrazepam (Roche's Roipnol) in patients with severe psychiatric disorders./** Azione ipnotica del flunitrazepam (Roipnol Roche) in soggetti con gravi turbe psichiatriche. Rivista Sperimentale in Freniatria. 103(1):201-211, 1979.

The hypnotic action of flunitrazepam on patients with severe psychiatric disturbances was studied. The first group of subjects included 24 men and women suffering from severe insomnia with a high degree of anxiety. The second group included 16 male subjects; 11 were drug addicts with withdrawal syndrome, and the other 5 suffered from manic episodes. Both groups were administered between 2 and 8mg of the drug. At the beginning of the study and during the subsequent 7 days of therapy, the following measures were recorded and rated: sleep latency, sleep duration, sleep quality, nighttime awakenings, and the condition the following morning. The drug was most effective with regard to sleep latency, sleep duration, and number of nighttime awakenings, with improvement ranging from 71.27% to 82.93%. After 7 days of treatment the total improvement was 82.54% in the first group and 75.13% in the second group. It is conclude that flunitrazepam is superior to other commonly used hypnotics and does not intefere with clinical tests and blood pressure. 14 references. (Journal abstract modified)

003296 Bonnaffoux, Daniel; JeanParis, Francois. Hopital de Saint-Remy-Clairefontaine, F-70160 Faverney (Haute-Saone), France **/Sexual difficulties among convalescing alcoholics: interest in prazepam treatment in 30 cases./** Troubles sexuels et postcure. Interet d'un traitement par prazepam: a propos de 30 observations. Psychologie Medicale. 12(10):2247-2254, 1980.

The treatment of sexual disturbances in convalescing alcoholics using prazepam was studied. Thirty male subjects were administered 20mg to 60mg of prazepam daily for a period of 6 months. Personal questionnaires monitored changes in the Ss' sexual disturbances. Results indicate that the majority of patients recovered sexual functions without the usual side-efects of other benzodiazepines. 4 references. (Journal abstract modified)

003297 Branconnier, Roland J.; Cole, Jonathan O.; Ghazvinian, Sasan. Boston State Hospital, Boston, MA **The therapeutic profile of mianserin in mild elderly depressives.** Psychopharmacology Bulletin. 17(1):129-131, 1981.

The therapeutic profile of mianserin was assessed in a sample of 75 elderly patients with mild to moderate depressive symptomatology and impaired cognitive function. All patients were assigned to a single blind, placebo run-in period of 7 days. During the second week of the study, patients were assigned to receive mianserin, amitriptyline, or placebo for the remainder of the 35 day trial. Mianserin was found to be an effective antidepressant comparable in therapeutic efficacy to the tricyclic antidepressants. Furthermore, it produces no significant cognitive impairment, alteration of cardiovascular function, or anticholinergic side-effects compared to the tricyclic antidepressants. 9 references. (Author abstract modified)

003298 Breuning, Stephen E.; Ferguson, Donald G.; Cullari, Salvatore. Psychological and Research Services, Coldwater Regional Center for Developmental Disabilities, Coldwater, MI **Analysis of single-, double-blind procedures, maintenance of placebo effects, and drug-induced dyskinesia with mentally retarded persons -- brief report.** Psychopharmacology Bulletin. 17(1):122-123, 1981.

The importance of reliability checks, placebo conditions, and double-blind conditions in assessing medication effects with institutionalized mentally retarded samples was investigated. Ss were 10 institutionalized mentally retarded prsons receiving thioridazine, chlorpromazine, or haloperidol. Ss were randomly assigned to one of four sequences of conditions manipulating expectancies and reinforcements. Significant differences due to staff expectancies, and loss of reinforcement (attention to residents at medication time) were found, demonstrating the importance of using reliability checks, placebo conditions, and double-blind conditions in assessing medication effects with mentally retarded persons. Clinical implications are discussed. 1 reference. (Author abstract modified)

003299 Brinkman, Samuel David. University of Houston **Lecithin and memory training in Alzheimer's disease. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3223-B, 1981. Ann Arbor, Univ. Microfilms No. 8104560, 108p., 1980.

The effects of lecithin and cognitive training procedures on memory performance, EEG, and regional cerebral blood flow (rCBF) were investigated in 10 patients (54 to 73 years old) diagnosed clinically as having mild to moderate Alzheimer's disease. The first phase of the study was a double-blind crossover design with a placebo control. No significant letithin/training effect on memory performance, EEG, or rCBF was found. During the second phase of the study, eight of these patient were followed in a series of single case studies to determine whether a longer period of lecithin therapy would facilitate memory functioning. Memory training was administered under placebo condition as well. A significant training effect on memory performance was found. Results are discussed in the context of the nature of the cholinergic deficit in Alzheimer's disease and the role of memory training procedures in elderly demented individuals. (Journal abstract modified)

003300 Broeker, Harald; Muller, Detlef; Muller, Jutta; Walther, Heinz. Neurologisch-Psychiatrische Kl., Med. Akad. Carus," Fetscherstr. 74, DDR-8019 Dresden, German Democratic Republic **/On the anticonvulsant blood level in therapy resistant epileptic patients./** Zum Antikonvulsivablutspiegelverhalten therapieresistenter Epilepsiepatienten. Psychiatrie, Neurologie und Medizinische Psychologie. 32(9):541-549, 1980.

Anticonvulsant blood level studies were conducted in 146 therapy resistant patients who had experienced severe epileptic attacks. Among the patients, most of whom were adults and were treated with combinations of drugs, only 24% reached the assumed normal phenytoin range, while 69% remained below it. With the administration of phenobarbital, however, 50% reached the therapeutic range, and only 14% reached the lower limiting value. Only in the latter group was an insufficient intake of drugs assumed. When diphenylhydantoin was administered, difficulties in determining the plasma water range were encountered. In practice, blood level determination was seen as having special value for detecting mild anticonvulsant intoxications and wrong drug dosages. 12 references. (Journal abstract modified)

003301 Calandra, C.; Drago, F.; Filetti, S. Clinica Psichiatrica, Facolta di Medicina e Chirurgia, Universita, Catania, Italy **/On a case of memory disturbances treated with vasopressin./** Su un caso con turbe mnestiche trattato con vasopressina. Minerva Psichiatrica. 21(1):63-66, 1980.

The treatment of memory disturbances using vasopressin was studied. The subject was a 29-year-old female, suffering from amnesia and hypothalamic disorders. The treatment consisted of the administration of five units of vasopressin daily for 10 days. Later, the subject was administered the Wechsler-Bellevue Intelligence Scale and the Benton Retention Test. Results show that therapy with vasopressin restored memory consolidation and learning processes. It is concluded that the physiological role of the drug was confirmed. 9 references. (Journal abstract modified)

003302 Casey, Daniel E.; Gerlach, Jes; Magelund, Gerhard; Christensen, Torben Rosted. Dept. of Psychiatry, VA Medical Center, Portland, OR 97201 **Dopaminergic and GABAergic aspects of tardive dyskinesia.** Psychopharmacology Bulletin. 17(1):49-50, 1981.

Clinical studies of the influence of dopaminergic and GABAergic drugs on tardive dyskinesia are reviewed. It is claimed that drugs with known, specific effects constitute the best method for investigation of the pathogenesis of tardive dyskinesia. Thus far, sulpiride (a selective antagonist to type 2 dopamine receptors), oxiperomide (another D2 dopamine receptor blocker), gamma-acetylenic GABA (a catalytic inhibitor of GABA transaminase), and muscimol (a GABA receptor agonist) have been demonstrated to reduce tardive dyskinesia. 13 references. (Author abstract modified)

003303 Castaigne, P.; Lapiane, D.; Morales, R. Clin. Malad. Systeme Nerv., Hopital de la Salpetriere, Paris, France **/Clomipramine treatment of pain from lesions of the peripheral nervous system: 30 case studies./** Traitement par la clomipramine des douleurs des neurophathies peripheriques. 30 observations. Therapeutique. 8:843-845, 1979.

Evidence is presented that clomipramine used alone is an effective analgesic against organic pain due to a lesion of the peripheral nervous system, particularly postherpetic pain. The quality of the drug response was related to the dosage and to the degree of tolerance. Fluohydrocortisone was the most powerful drug against orthostatic hypohension, the chief cause of limitation of treatment. No complications were seen, even in very elderly patients. (Journal abstract modified)

003304 Chojnacki, Michael; Mann, Edward; Shvartsburd, Alla; Wingfield, Cecil W.; Campbell, Katherine; Smith, Robert C. Smith: Texas Research Institute of Mental Sciences, 1300 Moursund, Texas Medical Center, Houston, TX 77030 **Comparison of standard and Holtor-monitored EKGs in a patient treated with several antidepressants.** Research Communications in Psychology, Psychiatry and Behavior. 6(1):103-111, 1981.

Cardiovascular effects and plasma levels of three antidepressant drugs were assessed by both standard and 24 hour Holto monitored EKGs in a patient with preexisting cardiac disease. Both EKG measurment procedures showed similar effects of the antidepressants on most EKG parameters; there was a small increase in the patient's heart rate. Only with the 24 hour EKG could the effects of antidepressants on arrhythmias and ectopic beats be accurately assessed. All three antidepressants had quinidine-like effects, reducing the number of ectopic beats.

003305 Chouinard, Guy; Annable, Lawrence; Ross-Chouinard, Andree; Olivier, Mireille; Fontaine, Francine. Dept. of Psychiatry, McGill University, Montreal, Canada **A double-blind, placebo-controlled study of piracetam in elderly psychiatric patients.** Psychopharmacology Bulletin. 17(1):129, 1981.

A double-blind, placebo controlled study of the efficacy of piracetam with elderly psychiatric patients with mild impairment of brain function, is described. The 60 patients were randomly assigned to one of three drug treatments: placebo, piracetam 2.4g per day, or piracetam 4.8g per day. During the 12 week study period, patients treated with either dose of piracetam had significantly higher mean scores on the Nurse's Improvement Scale than control Ss. On the WAIS, patients treated with the lower dose of piracetam did significantly better than the placebo or high dose drugs. Similarly, on the Wechsler Memory Scale, the lower dose group tended to show significant improvement relative to the placebo and high dose groups. 2 references. (Author abstract modified)

003306 Cohen, Nancy J.; Sullivan, Janette; Minde, Klaus; Novak, Carole; Helwig, Catherine. Psychiatric Research Unit, Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, Canada M5G 1X8 **Evaluation of the relative effectiveness of methylphenidate and cognitive behavior modification in the treatment of kindergarten-aged hyperactive children.** Journal of Abnormal Child Psychology. 9(1):43-54, 1981.

The effects of three modes of treatment of kindergarten aged hyperactive children were evaluated in relation to an untreated control group. The treatments were administered over a 3 month period and included: cognitive behavior modification, methylphenidate, and the two treatments combined. A followup assessment approximately 1 year later (at the end of the first grade) indicated that all the children became less symptomatic over time. Analyses of psychological, rating scale, observational, and interview data indicate that none of the treatments was significantly more effective than no treatment at all. 20 references. (Author abstract modified)

003307 Dam, Mogens. University Clinic of Neurology, Hvidovre Hospital, Copenhagen, Denmark **Recent advances in the treatment of epilepsy.** Acta Neurologica Scandinavica. 62(Suppl. 78):88-102, 1980.

Recent advances in the pharmacological treatment of epilepsy are discussed. Side-effects associated with the chronic use of traditional anticonvulsants (phenytoin, hydantoin, barbiturate derivatives) are summarized. Recent research into two newer antiepileptic drugs, carbamazapine and valproic acid, is reviewed in the areas of antiepileptic effect, basic human pharmacokinetics, interactions, and relation of plasma drug level and therapeutic effect. Special problems are delineated including dosing problems with phenytoin and problems related to treatment of epilepsy during pregnancy. A list of drugs, in order of effect on the different types of seizure disorder, is provided. 76 references.

003308 Diamond, Ronald J.; Brooner, Robert K.; Lowe, Donald; Savage, Charles. Center for Health Sciences, 600 Highland Avenue, Madison, WI 53792 **The use of minor tranquilizers with jail inmates.** Hospital & Community Psychiatry. 32(1):40-43, 1981.

The use of minor tranquilizers with jail inmates is discussed with reference to a survey of jail mental health services in 58 California counties and a medication linked group therapy program in one county jail. The decision whether or not to prescribe minor tranquilizers may present an apparent dilemma to mental health professionals working with inmate populations: by dispensing anxiety reducing drugs, they may help the inmate cope with existing hardship conditions, but they may also contribute to drug dependency. Data for 38 counties reveal a gener-

al distrust of minor tranquilizers as a therapeutic modality; with 34 respondents indicated that policies were restrictive with tranquilizers being seldomly prescribed. A medication linked group therapy program in the Santa Clara jail is described. After 7 months, it was decided to discontinue the policy of prescribing medication as part of the group. Although this policy change initially evoked anger and many members had initially maintained they attended sessions only to receive the drugs, only one group member dropped out after the change. It is suggested that with consistent prescribing policies and concurrent group therapy, minor tranquilizers can be important transitional objects toward more collaborative therapeutic encounters within the jail setting. 9 references. (Author abstract modified)

003309 Eisler, T.; Teravainen, H.; Nelson, R.; Krebs, H.; Weise, V.; Lake, C. R.; Ebert, M. H.; Whetzel, N.; Calne, D. B. Calne: Bldg. 10, Room 6D20, NIH, Bethesda, MD 20205 **Deprenyl in Parkinson disease.** Neurology. 31(1):19-23, 1981.

A double-blind, clinical comparison of (-)deprenyl a specific monoamine oxidase subtype-B inhibitor, with placebo with 11 parkinsonian patients, in which the efficacy of 10mg daily was studied over 4 weeks, is described. In four cases, the clinical score for parkinsonian deficits improved during deprenyl therapy, and in five cases it deteriorated. There was no change in one patient; two patients failed to complete the study. Deprenyl induced euphoria and insomnia. It is concluded that any advantages deriving from the use of (-)deprenyl in parkinsonism are limited, and probably dominated by its elevation of mood. Biochemical analysis failed to reveal any significant increase in platelet or plasma catecholamine concentrations during deprenyl therapy. There was, however, a significant decrease in plasma epinephrine and platelet monoamine oxidase activity. 20 references. (Author abstract modified)

003310 Elkins, Robert; Rapoport, Judith; Zahn, Theodore; Buchsbaum, Monte; Weingartner, Herbert; Kopin, Irwin; Langer, Dennis; Johnson, Chris. Rapoport: Bldg. 10, Rm. 3N204, NIMH, Bethesda, MD 20205 **Acute effects of caffeine in normal prepubertal boys.** Amercian Journal of Psychiatry. 138(2):178-183, 1981.

The cognitive and behavioral effects of caffeine were compared to those of amphetamine in 19 prepubertal boys. Ss were observed following administration of a single dose of placebo, 3mg/kg of caffeine, and 10mg/kg of caffeine in a double-blind, crossover design. Caffeine produced increased vigilance and decreased reaction time, as does amphetamine. Unlike amphetamine, the higher dose of caffeine did not have a calming motor effect but increased motor activity. Separate biological systems, therefore, may be differentially affected by the two substances. 30 references. (Author abstract modified)

003311 Esteban, Angel; Mateo, Dolores; Gimenez-Roldan, Santiago. Laboratory of Clinical Neurophysiology, Ciudad Sanitaria Provincial, Dr. Esquerdo, 46, Madrid-30, Spain **Early detection of Huntington's disease. Blink reflex and levodopa load in presymptomatic and incipient subjects.** Journal of Neurology, Neurosurgery, and Psychiatry. 44(1):43-48, 1981.

In a study of early detection of Huntington's disease, 17 Huntington's disease descendants were observed for the presence of dyskinesias and the blink reflex pattern before and after a levodopa load, and were compared to four incipient cases and normal control Ss. The R2 response on the blink reflex was found to be abnormal in 7 of the 17 Huntington's disease descendants. Such abnormalities were present in four untreated Ss and in three other Ss after administration of a single oral dose of levodopa/carbidopa. An increase in latency and differential latency (four cases), or an increase in a single one of these parameters (three cases) were the abnormalities found, resembling findings in four incipient cases detected during routine family surveys. Continuous administration of levodopa/carbidopa over a 10 to 20 day period did not induce new characteristics in the blink reflex, nor did it increase those detected previously, and no case developed chorea. It is suggested that the analysis of the blink reflex after a single oral levodopa/carbidopa dosage could provide an objective and quantifiable method for the detection of individuals at-risk for Huntington's disease. 13 references. (Author abstract modified)

003312 Ferguson, H. B.; Pappas, B. A.; Trites, R. L.; Peters, D. A. V.; Taub, H. Dept. of Psychology, Carleton University, Ottawa, Ontario K1S 5B6, Canada **Plasma free and total tryptophan, blood serotonin, and the hyperactivity syndrome: no evidence for the serotonin deficiency hypothesis.** Biological Psychiatry. 16(3):231-238, 1981.

Total and free plasma tryptophan and plasma cortisol levels were determined for children diagnosed as hyperactive or learning disabled and in normal siblings of these Ss. No differences were observed among the groups on any of the dependent variables related to a number of parameters measured for the hyperactive children, such as degree of hyperactivity, presence of food allergies, favorable response to methylphenidate, and brain dysfunction. Moreover, in further comparisons, no differences were found between hyperactive and age matched controls on these variables, as well as blood serotonin, nor were any differences found for a group of hyperactive children between placebo and methylphenidate trials. These data do not support earlier suggestions of a serotonin deficiency in hyperactive children. 26 references. (Author abstract)

003313 Fontan, Michel; Piquet, Jean-Michel; Delot, Daniel. Centre Hospitalier Regional, place de Verdun, F-59037 Lille Cedex, France /**Polygraphic study of night sleep under the effects of minaprine.**/ Etude polygraphique du sommeil de nuit sous minaprine. Psychologie Medicale. 12(13):2809-2818, 1980.

Polygraphic tests were conducted to determine the effect of minaprine on sleep. Five Ss were given 100mg of minaprine every morning and evening for 15 days. Prior to the experiment, two of the Ss were satisfied with their sleep, one S was usually satisfied with his sleep; one S was a sleepwalker, and one S had generalized sleep problems. Three polygraphs were done for each S over the course of the experiment, and slow, rapid, and intermediate sleep were distinguished. Results show improved sleep organization in four out of five Ss. 34 references. (Journal abstract modified)

003314 Froscher, W.; Eichelbaum, M.; Gugler, R.; Hildenbrand, G.; Penin, H. Dept. of Neurology and Epileptology, University of Bonn, D-5300 Bonn 1, West Germany **A prospective randomised trial on the effect of monitoring plasma anticonvulsant levels in epilepsy.** Journal of Neurology. 224(3):193-201, 1981.

The contribution to therapeutic effects of antiepileptic drugs of monitoring plasma anticonvulsant levels was assessed in a prospective randomized trial employing 127 epileptic outpatients as Ss. Ss were assigned to one of two groups. Plasma levels of Group A were reported to the treating physician, who attempted to keep the plasma levels within the therapeutic range. Plasma levels of Group B were not reported to the treating physician. During the one year study period, data from 105 patients were collected. No significant differences in therapeutic results of anticonvulsant therapy were found between the two groups. Thus, knowledge of plasma levels of antiepileptic drugs did not further improve therapeutic results. 11 references. (Author abstract modified)

003315 Fukuhara, Tomokazu; Kawahara, Ryuzo; Hazama, Hidebumi. Dept. of Neuropsychiatry, Tottori University, School of Medicine, Tottori, Japan **Serum concentration and clinical effect of antiepileptics.** Kyushu Neuro-Psychiatry. 25(3-4):212-218, 1979.

Serum concentration of antiepileptics in 78 ambulant epileptic patients was measured by gas chromatography. The results were as follows: the serum level of sodium valproate decreased slightly 4 to 5 months after the the combined administration of sodium valproate with the antiepileptics phenobarbital, diphenylhydantoin, or carbamazepine; and the serum levels of phenobarbital, diphenylhydantoin, and carbamazepine also decreased. The number of cases in which the serum level of phenobarbital exceeds 30mg/ml were larger in the phenobarbital plus primidone group than in the phenobarbital or primidone group. However, no significant discrepancy was found in either case. Between the dose and serum concentration of phenobarbital there was a statistically linear correlation. The level/dosage ratios of diphenylhydantoin, carbamazepine, and sodium valproate were larger in the excellently controlled general motor seizure group than in the moderately controlled general motor seizure group. The level/dosage ratios of diphenylhydantoin, carbamazepine, and sodium valproate were larger in the moderately controlled psychomotor seizure group than in the uncontrolled psychomotor seizure group. The results illustrate the clinical effects and interactions of antiepileptic drugs in response to drugs. 20 references. (Author abstract modified)

003316 Gannaway, D. J.; Mawer, G. E. Dept. of Pharmacology, Materia Medica and Therapeutics, Medical School, University of Manchester, Manchester M13 9PT, England **Transfer from multiple to single antiepileptic drug therapy.** Lancet. No. 8213:217, 1981.

Evidence is reported for the successful management of most newly diagnosed epileptic patients with a single drug. The seizure frequency of patients on multiple drug therapy was compared with that of patients being treated with phenytoin alone. Comparable results were obtained with most patients, and it is concluded that many poorly controlled epileptic patients gain little extra benefit from multiple drug therapy. 3 references.

003317 Gold, Mark S.; Pottash, A. L. C.; Sweeney, Donald R.; Kleber, Herbert D. Yale University School of Medicine, Dept. of Psychiatry, New Haven, CT 06510 **Efficacy of clonidine in opiate withdrawal: a study of thirty patients.** Drug and Alcohol Dependence. 6(4):201-208, 1980.

Evidence is presented on the efficacy of clonidine in reducing objective signs and subjective symptoms of opiate withdrawal in 30 hospitalized addicts. The reduction was observed in an acute first dose study using a placebo controlled double-blind crossover trial. In an open trial, with repeated administration clonidine suppressed opiate withdrawal signs and symptoms and allowed all of the patients to detoxify successfully from chronic addiction. These data support a release from chronic opiate induced noradrenergic inhibition producing noradrenergic hyperactivity as the pathophysiological substrate for opiate withdrawal. It appears that clonidine replaces opiate mediated inhibition with alpha-2 mediated inhibition of noradrenergic nuclei. 20 references. (Author abstract modified)

003318 Goode, David J.; Meltzer, Herbert Y.; Fang, Victor S. Dept. of Psychiatry, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC 27103 **Increased serum prolactin levels during phenothiazine and butyrophenone treatment of six postpartum women.** Psychoneuroendocrinology. 5(4):345-351, 1980.

Serum prolactin levels of six women who developed psychoses during the postpartum period and were treated with neuroleptic drugs, were found to be higher than those of a group of nonpostpartum women of comparable age treated with similar doses of these drugs. The magnitude of the neuroleptic induced elevations in serum prolactin diminished with time during the postpartum period and returned to that found in nonparturient drug treated females approximately 120 days postpartum. A similar increased responsiveness of the hypothalamic/pituitary axis controlling prolactin secretion in postpartum females is manifested by the suckling response and increased prolactin response to thyrotrophin releasing hormone (TRH). The time course of normalization of these enhanced endocrine responses is roughly similar to that found for normalization of the prolactin response to neuroleptic drugs. A common mechanism may underlie each of these phenomena. 16 references. (Author abstract modified)

003319 Gopinathan, G.; Teravainen, H.; Dambrosia, J. M.; Ward, C. D.; Sanes, J. N.; Stuart, W. K.; Evarts, E. V.; Calne, D. B. Calne: NINCDS, Building 10, Room 6D20, NIH, Bethesda, MD 20205 **Lisuride in parkinsonism.** Neurology. 31(4):371-376, 1981.

The actions of lisuride, a dopaminergic ergot derivative, were studied in 20 parkinsonian patients. When the dose was increased gradually, most patients tolerated up to 5mg daily. Clinical assessment and objective, computer assisted evaluation revealed improvement in akinesia, rigidity, and tremor. Adverse reactions were similar to those seen with levodopa and bromocriptine, but somnolence tended to occur more often with lisuride. Clinical implications of these data are discussed. 14 references. (Author abstract modified)

003320 Green, Leonard; Warshauer, David. Dept. of Psychology, Washington University, St. Louis, MO 63130 **A note on the hyperactivity with reference to the rate-dependency effect of drugs.** Journal of Nervous and Mental Disease. 169(3):196-198, 1981.

Research findings that administration of stimulant drugs to hyperactive children often, paradoxically, leads to a decrease in their excessive motor activity are reviewed and various explanations are considered. Emphasis is on the rate dependency hypothesis, which states that the effect of a given drug is determined by the baseline rate of behavior emitted by the S. Amphetamines decrease response output under schedules maintaining high response rates, but increase response output under schedules maintaining low response rates. In hyperactive children, when baseline motor activity is high, the stimulant drug should, therefore produce a reduction in such behavior. It is also suggested that greater emphasis be placed on reporting individual data, and that more detailed specification be made of the target responses. 30 references. (Author abstract modified)

003321 Greenhill, Laurence L.; Barmack, Joseph E.; Spalten, David; Anderson, Mary; Halpern, Frieda. New York Psychiatric Institute, New York, NY **Molindone hydrochloride in the treatment of aggressive, hospitalized children.** Psychopharmacology Bulletin. 17(1):125-127, 1981.

The safety and effectiveness of molindone hydrochloride (Moban) treatment of hospitalized preschool (ages 6 to 11 years) children who meet DSM-III criteria for undersocialized conduct disorder with aggressivity, severe type, were assessed. The nature of the drug's therapeutic effects and treatment emergent symptoms (weight changes, presence of involuntary movement disorders, sedation, attentional deficits, and prolactin secretory changes) were followed. Aggression ratings were improved for five of the six Ss, with mild but acceptable treatment emergent

symptoms, following Moban treatment. 12 references. (Author abstract modified)

003322 Haldeman, S.; Goldman, J. W.; Hyde, J.; Pribram, H. F. W. Dept. of Neurology, University of California, Irvine Medical Center, 101 City Drive South, Orange, CA 92668 **Progressive supranuclear palsy, computed tomography, and response to antiparkinsonian drugs.** Neurology. 31(4):442-445, 1981.

Findings on computed tomography in three cases of progressive supranuclear palsy are reported, and amelioration of some symptoms by anticholinergic medication is described. Three patients with progressive supranuclear palsy demonstrated atrophy of the midbrain, pons, cerebellum, and cerebral hemispheres by computed tomography with horizontal, sagittal, and coronal reconstruction. Benztropine therapy resulted in improvement of speech and gait without significantly affecting the vertical gaze palsy. Benztropine had to be discontinued because of mental confusion in one patient. Additional improvement was not obtained with amantadine, and in one case symptoms became worse. 15 references. (Author abstract modified)

003323 Hefti, Franz; Melamed, Eldad. Laboratory of Neuroendocrine Regulation, Massachusetts Institute of Technology, Cambridge, MA 02139 **L-DOPA's mechanism of action in Parkinson's disease.** Trends in NeuroSciences. 3(10):229-231, 1980.

The mechanisms of L-DOPA action in Parkinson's disease is reviewed, with special emphasis on the most important phenomenon that limits L-DOPA's use in the treatment of parkinsonism -- its declining effectiveness. Declining efficacy and adverse side-effects such as dyskinesias and psychiatric reactions, are phenomena that, after several years, limit L-DOPA's use in the therapy of Parkinson's disease, and can occur together or independently of each other in different patients. Three possible mechanisms underlying the declining effectiveness of L-DOPA therapy are noted: 1) that only insufficient amounts of L-DOPA are decarboxylated to dopamine after large reductions in DOPA decarboxylase activity; 2) that chronic treatment with L-DOPA has a toxic influence on dopaminergic neurons and could accelerate the progression of Parkinson's disease; and 3) that alteration in receptor sensitivity might take place. 18 references.

003324 Henry, Jean-Francois; Hrdina, Pavel D.; Altamura, Carlo; Rovei, Vincenzo; Gomeni, Roberto; Hervy, Marie-Pierre; Forette, Francoise; Morselli, P. L. Dept. de Recherche Clinique, S.N.C. Lers-Synthelabo, 58, rue de la Glaciere, F-75013 Paris, France **/Pharmacokinetics of amitriptyline, imipramine, and maprotiline in the elderly./** Pharmacocinetique de l'amitriptyline (AMI), l'imipramine (IMI) et la maprotiline (MAP) chez le sujet age. Psychologie Medicale. 12(11):2389-2394, 1980.

Pharmacokinetics of amitriptyline, imipramine, and maprotiline in the elderly were investigated. The Ss, between ages 75 and 83, received a single dose of 125mg of amitriptyline, 125mg of imipramine, and 175mg of maprotiline. The results of the observations of the elderly were compared to those obtained in previous research with young Ss. In comparison with values reported in young adults, a reduction of plasmatic clearances and an increase in bioavailability of imipramine and amitriptyline were observed in the elderly. The rate of absorption of the three compounds was the same in young and elderly patients; the rate of metabolite formation was found to be slower in the elderly. Alterations in heartrates, blood pressure, or EKG occurred in all subjects with amitriptyline, but not with imipramine or maprotiline. 10 references. (Journal abstract modified)

003325 Hogben, George L.; Cornfield, Richard B. 12 Rockbridge Rd., Rye, NY 10580 **Treatment of traumatic war neurosis with phenelzine.** Archives of General Psychiatry. 38(4):440-445, 1981.

The treatment of traumatic war neurosis with phenelzine is reported. Five patients with traumatic war neurosis had favorable therapeutic responses to phenelzine sulfate. These patients did not respond to multiple previous therapeutic trials with antipsychotics, tricyclic antidepressants, and psychotherapy with or without medication. With phenelzine, the patients felt calmer and stopped having nightmares and flashbacks of traumatic war material. Startle reactions and aggressive violent outbursts also ceased. 25 references. (Author abstract)

003326 Il'ina, N. A.; Antipova, R. I.; Khokhlov, A. P. Lab. nasledstvennoy patologii nervnoy sistemy I Moskovskogo meditsinskogo instituta im I. M. Sechenova, Moskva, USSR **/The use of lithium carbonate for treating Kugelberg-Welander spinal amyotrophy patients./** Primeneniye uglekislogo litiya dlya lecheniya spinal'noy amiotrofii Kugel'berga-Velandera. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(11):1657-1660, 1980.

The use of lithium carbonate for treating Kugelberg-Welander spinal amyotrophy patients was studied in 11 men and 9 women (12 to 42 years old). All Ss had clear clinical and electromyographic symptoms of the disease. The use of lithium carbonate caused positive clinical and biochemical changes. Results suggest that lithium carbonate, which is an inhibitor of adenylcyclase, should be used medicinally because of the disturbance of the metabolism of 3',5'-adenosine monophosphate in patients with Kugelberg-Welander's amyotrophy. These results show that the drug stabilizes the pathological process. 13 references. (Journal abstract modified)

003327 Jansen, W.; Bruckner, G. W. Altenkrankenhaus, Nurnberg, West Germany **/Treatment of organic brain disturbances in elderly patients. A clinical double-blind study with macromolecular organ lysates (cytoplasmatic therapy according to Theurer)./** Behandlung hirnorganischer Storungen von Alterspatienten. Eine klinische Doppelblindstudie mit makromolekularen Organlysaten (Zytoplasmatische Therapie nach Theurer). Neurologie und Psychiatrie fur die Praxis. 5:214-220, 1979.

Double-blind studies on the therapeutic effect of macromolecular cytoplasmatic substances for the treatment of organic brain disturbances in elderly patients are reported. Such substances are seen as causing physiological stimulation or cerebral protein synthesis. Theoretical considerations on the mechanisms of action of cytoplasmatic substances are offered. In the cases represented, a marked improvement of cerebral capacity was recorded, thus giving new hope to the elderly patient with cerebral failure. (Journal abstract modified)

003328 Jardim, Edymar; Takayanagui, Osvaldo M. Faculdade de Medicina de Ribeirao Preto, Av. 9 de Julho 980, 14100 Ribeirao Preto, Sao Paulo, Brazil **/Epilepsy and chronic Chagas' disease./** Epilepsia e doenca de Chagas cronica. Arquivos de Neuro-Psiquiatria. 39(1):32-41, 1981.

A total of 167 epileptics in two groups, one consisting of 44 Ss with chronic Chagas' disease, were studied in order to establish a causal relationship between chronic Chagas' disease and the epileptic syndrome, and to evaluate therapeutic results with anticonvulsant drugs. Origin, sex, age, onset of epilepsy, and types of seizures were examined for all Ss. Results show that the chagasic patients have a later onset of seizures than do the control group, and they exhibit a predominance of autonomic partial seizures. The neurological examinations and cerebrospinal fluid tests reveal moderate rates of disturbances, which are high enough to characterize a neurological syndrome. The EEG recordings for 15 of the 44 cases reveal patterns of diffuse cerebral damage in half of the patients. The pharmacological control of epileptic seizures in Chagas' disease requires greater quanti-

ties of anticonvulsant drugs than do other types of epilepsy. 34 references. (Journal abstract modified)

003329 Jasinski, Donald R. NIDA, Addiction Research Center, Baltimore, MD **Clinical pharmacology of mixed agonist-antagonist drugs.** Psychopharmacology Bulletin. 17(1):85-86, 1981.

The clinical pharmacology of mixed agonist/antagonist drugs is briefly reviewed, and the utility of buprenorphine, a partial agonist of the morphine type, in treating narcotic addiction is described in relation to structure/activity relations and clinical acceptance. Buprenorphine produces methadone-like and morphine-like subjective effects that are acceptable to addict/patients. However, buprenorphine does not produce significant methadone-like or morphine-like physical dependence and toxicity. 5 references. (Author abstract modified)

003330 Kanto, J.; Iisalo, E.; Kangas, L.; Valovirta, E. Dept. of Aneesthesiology, Turku University Central Hospital, Kiiamyllynkatu 8, SF-20520 Turku 52, Finland **A comparative study on the clinical effects of rectal diazepam and pentobarbital on small children. Relationship between plasma level and effect.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(8):348-351, 1980.

The clinical effects of rectal diazepam (5mg) and pentobarbital (60mg) were studied in 75 juvenile surgical patients. No difference in demeanor in the anesthetic room, preoperative emesis, response to venepuncture, degree of salivary suppression, postoperative state in the recovery room, or postoperative emetic effects were found between the two drug groups. Plasma concentrations of diazepam and its active metabolites were not significantly correlated with clinical effects of diazepam, but a weak positive correlation between plasma pentobarbital concentrations and clinical effects was found. Plasma concentrations of pentobarbital and benzodiazepine showed wide interindividual variation, indicating irregular rectal drug absorption. 19 references. (Author abstract modified)

003331 Klapetek, J. Pavlovova 13, 775 00 Olomouc, Czechoslovakia **/The tranquilizer Demetrin (prazepam)./** Trankvilizer Demetrin (prazepam). Ceskoslovenska Neurologie a Neurochirurgie. 43(1):51-58, 1980.

The effects of the tranquilizer prazepam, sold in Europe under the commercial name Demetrin, were studied in 115 cases of patients suffering from epilepsy. The results were often surprisingly good. Two cases of young patients are described, with one case of the treatment of migraine with prazepam. It is confirmed that in the treatment of neurotic difficulties with symptoms of anxiety and depression, prazepam is qualitatively different from diazepam and chlordiazepoxide. The biochemical and pharmacological properties of prazepam are described. 37 references.

003332 Kolin, Irving S.; Linet, Otto I. 1315 South Orange Ave., Orlando, FL 32806 **Double-blind comparison of alprazolam and diazepam for subchronic withdrawal from alcohol.** Journal of Clinical Psychiatry. 42(2):169-173, 1981.

The efficacy and safety of a new triazolobenzodiazepine, alprazolam, was compared to diazepam in 46 alcoholics in a double-blind study. The drugs were administered for 21 days starting on the fifth day after the last drink. The mean optimal daily oral dose of alprazolam was 2.2mg and that of diazepam was 20.2mg. Alprazolam was as effective as diazepam was in the relief of anxiety as measured by the Hamilton Anxiety Rating Scale, Physician's Global Impressions, Patient's Global Impressions, Hopkins Symptom Checklist, and Target Symptoms Record. At the end of the trial 95% of the patients in both groups experienced moderate to marked therapeutic effect and felt much or very much better as compared to the beginning of the study. The number of side-effects was similar in both groups and they were mostly described by patients as mild. 14 references. (Author abstract)

003333 Lambie, D. G.; Johnson, R. H. Wellington Clinical School of Medicine, Wellington, New Zealand **The effects of phenytoin on phenobarbitone and primidone metabolism.** Journal of Neurology, Neurosurgery, and Psychiatry. 44(2):148-151, 1981.

Serum concentrations of primidone and its metabolites, phenobarbitone and phenylethylmalonamide, were measured in 40 epileptic patients receiving treatment with primidone alone or primidone plus phenytoin. Serum phenobarbitone concentrations were also measured in 100 patients receiving phenobarbitone, alone or with phenytoin. Patients receiving either phenobarbitone or primidone in combination with phenytoin showed raised serum phenobarbitone concentrations. Phenytoin also caused raised phenobarbitone concentrations. Phenytoin also caused raised phenylethylmalonamide concentrations in patients on primidone. 9 references. (Author abstract)

003334 Lloyd, K. G.; Munari, C.; Worms, P.; Bossi, L.; Bancaud, J.; Talairach, J.; Morselli, P. L. Research Dept., Synthelabo-LERS, Paris F-75013, France **The role of GABA mediated neurotransmission in convulsive states.** Advances in Biochemical Psychopharmacology. 26:199-206, 1981.

Studies concerning the role of GABA mediated neurotransmission in convulsive states are reviewed. The anticonvulsant actions of drugs known to augment GABA synaptic activity either by being GABA receptor agonists (SL 76 002 and muscimol) or relatively specific inhibitors of GABA metabolism (gabaculine and amino-oxyacetic acid) are considered. New evidence that GABA neurons are dysfunctional in human epilepsy is presented as ascertained from the study of brain material removed during surgical resection for intractable epilepsy. Results indicate that glutamic acid decarboxylase activity and 3H-GABA binding sites are decreased in epileptic regions of many patients, as compared to nonepileptic brain regions. Increasing GABA mediated neurotransmission also plays a role in the mechanism of action of numerous anticonvulsants, either by direct GABA receptor stimulation or by inhibition of the metabolism of GABA. 41 references.

003335 Marcovici, Martin; O'Brien, Charles P.; McLellan, A. Thomas; Kacian, Jane. VA Medical Center, (158), University and Woodland Avenues, Philadelphia, PA 19104 **A clinical, controlled study of l-alpha-acetylmethadol in the treatment of narcotic addiction.** American Journal of Psychiatry. 138(2):234-236, 1981.

A comparison was made of the clinical effectiveness of l-alpha-acetylmethadol (LAAM) and methadone in the treatment of narcotic addiction. LAAM was as effective as methadone on all outcome measures, including length of stay in treatment. Two clinicopharmacologic properties of LAAM caused some patients to ask for a switch to methadone. These phenomena are described, along with their impact on the clinical effectiveness of the drug in dealing with opiate dependent patients. 17 references. (Author abstract modified)

003336 Markham, Charles H.; Diamond, Shirley G. Reed Neurological Research Center, University of California at Los Angeles, School of Medicine, Los Angeles, CA 90024 **Evidence to support early levodopa therapy in Parkinson disease.** Neurology. 31(2):125-131, 1981.

To investigate whether duration of disease or of levodopa treatment was responsible for gradual worsening of parkinsonian patients, 58 persons treated with levodopa were classified based on predopa disease duration. Data over 6 years of treatment show that disease duration is the determining factor in the gradual worsening of parkinsonian patients. Patients matched for disease duration had similar disability scores regardless of duration of therapy. Matched for therapy duration, patients with longer disease duration had consistently higher disability scores. Incidence of side-effects showed no differences between groups and did not increase over time. It is concluded that delaying therapy fails to improve disability in the early years of disease and does not confer any benefit in later years. 26 references. (Author abstract)

003337 Marzilli, Robert Alexander. University of Rhode Island **The effectiveness of imipramine in the treatment of enuresis: the significance of type of enuresis and reported level of sleep. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3188-B, 1981. Ann Arbor, Univ. Microfilms No. 8102334, 89p., 1980.

Factors which can influence the effectiveness of imipramine hydrochloride in the treatment of enuresis were evaluated with 28 male enuretics, aged 5 to 11 who were classified according to type of enuresis and reported level of sleep. Half the subjects were given the imipramine first, and the other half were given the placebo first. The results indicate that imipramine seems to reduce the number of wets under the conditions of the study regardless of type of enuresis or level of sleep, but it is most effective for enuretics who are deep sleepers. It does not appear that the imipramine's effectiveness is brought about by an increase in bladder capacity, since no significant change in the frequency of urination was shown for any of the groups while on the imipramine. It is felt, instead, that the efficacy of imipramine is due to physiological changes in the sleep stages as well as to its relaxing effect on the bladder musculature. (Journal abstract modified)

003338 McIntyre, Hugh B.; Firemark, Hugh M.; Cho, Arthur K.; Bodner, Lynn; Gomez, Miguel. Dept. of Neurology, Harbor-UCLA Medical Center, 1000 West Carson Street, Torrance, CA 90509 **Computer analyzed EEG in amphetamine-responsive hyperactive children.** Psychiatry Research. 4(2):189-197, 1981.

EEG frequency analysis and evoked potentials (EPs) of 27 hyperactive children were examined to determine which, if any, of these electrophysiological parameters might be useful for the selection of those children likely to respond to stimulant medication. The children were treated with placebo, d-amphetamine, and l-amphetamine in double-blind fashion and in random order. EEGs for frequency analysis, visual EPs and auditory EPs were obtained before and during treatment. Off medication, hyperactive responders to amphetamine had higher predominant beta frequency and shorter latencies of some EP waves than did nonresponders. Although the findings reported here would not select all responders, they would allow the exclusion of most nonresponders. 17 references. (Author abstract)

003339 Mikhaylova, N. M.; Severnyy, A. A. 3-e klinicheskoye otdeleniye Instituta psikhiatrii AMN SSSR, Moskva, USSR / **The effect of withdrawal from prolonged prophylactic treatment with lithium./** Effekt otmeny dlitel'noy profilakticheskoy litiyevoy terapii. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(8):1216-1220, 1980.

The effect of withdrawal from prolonged prophylactic treatment with lithium was studied in two groups of patients, each consisting of 35 people (9 men and 26 women). One of these groups was used as a control group. In each group studied there were 15 cases of manic-depressive psychoses and 20 cases of attack-like schizophrenia. The development of these illnesses was monitored in one group following withdrawal from a prolonged and successful prophylactic intake of lithium drugs and compared to that in the control group, where the administration of lithium salts was not suspended. Results demonstrate a statistically significant increase of phase-like attacks as well as an increased number of hospitalizations due to lithium withdrawal. It is concluded that prolonged and continuous lithium prophylaxis is necessary even following complete remissions. 8 references. (Journal abstract modified)

003340 Mikkelson, Edwin; Lake, C. Raymond; Brown, Gerald L.; Ziegler, Michael G.; Ebert, Michael H. Lake: Dept. of Psychiatry, USUHS, Building B, Room 3049, 4301 Jones Bridge Road, Bethesda, MD 20014 **The hyperactive child syndrome: peripheral sympathetic nervous system function and the effect of d-amphetamine.** Psychiatry Research. 4(2):157-169, 1981.

Sympathetic nervous system function was evaluated in medication free hyperactive children by measuring plasma levels of norepinephrine (NE) and dopamine-beta-hydroxylase and then comparing the effects of two therapeutic doses of d-amphetamine to placebo in these patients. The medication free hyperactive patients and controls had similar NE levels and blood pressures while recumbent, and a similar increase in NE on standing, but the patients had a larger pressor response on standing. In the hyperactive patients, d-amphetamine significantly increased blood pressure, pulse rate, and NE levels. The change in NE levels correlated with the change in amphetamine levels. The medication free patients, when more anxious, had higher plasma NE levels. 54 references. (Author abstract)

003341 Montplaisir, J.; Saint-Hilaire, J. M.; Walsh, J. T.; Laverdiere, M.; Bouvier, G. Centre d'etude du sommeil, Hopital due Sacre-Coeur, Montreal, Montreal, Quebec H4J 1C5, Canada **Naloxone and focal epilepsy: a study with depth electrodes.** Neurology. 31(3):350-352, 1981.

The effects of naloxone were studied in five patients with focal epilepsy who had electrodes implanted in cortical and subcortical structures. There were no changes in interictal spike activity, responses to electrical stimulation, or frequency of spontaneous seizures. These results indicate that naloxone does not suppress interictal spike activity in any of the brain regions studied, whether or not these regions were within the epileptic zone. Furthermore, naloxone did not modify the response threshold of the cortical or limbic structures to electrical stimulation, nor did it interfere with the occurrence of seizures in one case of primary hippocampal epilepsy. Results do not support the hypothesis that opiate peptides play a major role in human focal epilepsy, at least in patients with an epileptic focus in the amygdala or hippocampus. 14 references. (Author abstract modified)

003342 Moore, Ray; Mills, Ivor H.; Forster, Alison. Dept. of Medicine, University of Cambridge, Aldenbrooke's Hospital, Cambridge C2B 2QQ, England **Naloxone in the treatment of anorexia nervosa: effect on weight gain and lipolysis.** Journal of the Royal Society of Medicine. 74(2):129-131, 1981.

The effects of a constant intravenous infusion of naloxone in doses ranging from 3.2 to 6.4mg/day were studied in a group of patients with anorexia nervosa. Patients showed a significantly greater weight gain during the infusion compared with the periods before and after naloxone. Plasma beta-hydroxybutyrate and nonestrified fatty acid levels fell during the infusion. It is suggested that, in man, naloxone has an antilipolytic effect in vivo. 5 references. (Author abstract)

003343 Morselli, Paolo L.; Franco-Morselli, Rosetta; Bossi, Laura. Dept. of Clinical Research, Synthelabo-LERS, 58 Rue de la Glasiere, F-75013 Paris, France **Clinical pharmacokinetics in newborns and infants: age-related differences and therapeutic implications.** Clinical Pharmacokinetics. 5(6):485-527, 1980.

Age related differences and therapeutic implications of clinical pharmacokinetics in newborns and infants are reviewed. The impact of development and pathology on the physiological variables determining drug disposition is described, and kinetic profiles of representative drugs used in the perinatal period and infancy are discussed. Data are reported which illustrate that the risk of both overdosing or underdosing drugs is greatly increased in the perinatal period. It is urged that therapeutic drug monitoring be regarded not as experimentation, but as an integral part of therapeutic intervention in the perinatal period. 304 references.

003344 Muller, Eckhart; Klagge, Eckehart; Stosch, Rainer. Nervenklinik, Medizinische Akademie Erfurt, Nordhauserstrasse 74, DDR-506 Erfurt, German Democratic Republic **/Investigation into the effect of flupherazine hydrochloride (Lyorodin) in children with behavioral disorders by means of psychophysiological parameters./** Uberprufung der Wirkung von Fluphenazinhydrochlorid (Lyorodin) bei verhaltensgestorten Kindern mittels psychophysiologischer Parameter. Psychiatrie, Neurologie und Medizinische Psychologie. 31(11):689-695, 1979.

In a group of 44 children with behavioral disorders, the mode of action of the phenothiazine preparation fluphenazine hydrochloride (Lyorodin) was tested by means of psychophysiological methods of measurement (critical flicker fuse frequency and measurement of response time). In some of the comparative examinations before and after administration of the drug, significant differences were found. A defined psychic stress resulted in changed measured values in both methods. Children with cerebral injuries showed a lower degree of reaction after the administration of the drug than childrn who were not encephalopathically affected. 36 references. (Journal abstract)

003345 Namba, Shimpei; Ishimitsu, Hiroshi; Nakasone, Susumu. Dept. of Neurosurgery, Iwakuni National Hospital, Iwakuni, Japan **Clinical significance of pyridoxine administration in L-dopa therapy of parkinsonism.** Brain and Nerve. 32(10):991-1000, 1980.

Twenty two patients with idiopathic parkinsonism were studied to assess the effects of administering pyridoxine in combination with the ongoing therapeutic regimen (L-dopa in combination with peripheral decarboxylase inhibitor). Administration of pyridoxine evoked oral dyskinesias and dyskinesias in the extremities in two patients. In three patients, pyridoxine prevented aggravation of the clinical symptoms of parkinsonism which might be expected following decrease in L-dopa/peripheral decarboxylase inhibitor. Pyridoxine increased the effectiveness of L-dopa/peripheral decarboxylase inhibitor in at least 6 of 18 patients. Pretreatment of rats with pyridoxine resulted in a 30% increase of dopamine in brain following L-dopa/peripheral decarboxylase inhibitor administration. Pyridoxine also elevated cerebrospinal fluid 5-hydroxyindoleacetic acid levels. 23 references. (Journal abstract modified)

003346 Neborsky, Robert; Janowsky, David; Munson, Ethan; Depry, Dennis. Dept. of Psychiatry, School of Medicine, University of California, La Jolla, CA 92093 **Rapid treatment of acute psychotic symptoms with high- and low-dose haloperidol: behavioral considerations.** Archives of General Psychiatry. 38(2):195-199, 1981.

The treatment of acute psychotic episode with low and high dose haloperidol was investigated in 20 psychiatric inpatients with diagnoses of schizophrenia, acute paranoid reaction, and manic-depressive illness/manic type (DSM-II criteria), using a rapid neuroleptization technique. A 6 day maintenance phase followed. Both groups improved at 1 hour, 1 day, and 7 days after starting treatment; and neither group differed as to degree of rapidity of symptom alleviation. Therefore, the results of the study do not give support for the administration of high doses of haloperidol to young, acutely psychotic inpatients with relatively good prognoses. 23 references. (Author abstract modified)

003347 Newhouse, Paul; Bridenbaugh, R. Harlan. Dept. of Psychiatry, Walter Reed Army Medical Center, Washington, DC 20012 **Pharmacologic characterization and lecithin treatment of a patient with spontaneous oral-facial dyskinesia and dementia.** American Journal of Psychiatry. 138(2):251-252, 1981.

A case history of a patient who developed a spontaneous oralfacial dyskinesia and mild dementia without exposure to neuroleptics is reported. Pharmacologic characterization led to selection of lecithin treatment, and improvement was noted not only in the movement disorder, but also in the patient's higher cognitive functioning. The enhancement of cholinergic function by lecithin is believed responsible for these effects. 10 references.

003348 Nieto, Dionisio. Service de Psychiatrie, Institut National de Neurologie et Neurochirurgie, Insurgentes Sur no. 3877, Mexico 22, D.F. Mexico **/Prussian blue: specific treatment of thallium, arsenic, industrial solvent intoxication, and other polyneuropathologies. A possible antipsychotic agent./** Bleu de Prusse: antidote specifiqu contre le thallium, l'arsenic, les solvants industriels et autres polynevropathies. Un agent antipsychotique possible. Psychologie Medicale. 12(11):2395-2397, 1980.

The use of Prussian blue as a possible antipsychotic agent in the treatment of thallium, arsenic, and industrial solvent intoxications was studied. Three cases of intoxication by thallium were treated with insoluble Prussian blue and demonstrated complete recuperation. One case of arsenic intoxication treated with the drug recovered completely over 3 months after the intoxication and after treatment with D-penicillamine failed. In six cases of polyneuropathology due to inhalation of industrial solvents, there was complete recuperation with Prussian blue. Favorable development with Prussian blue treatment in three cases of schizophrenia which had not responded to other treatment and five cases of schizophreniform mental disturbance were observed. 5 references. (Journal abstract modified)

003349 Nissen, G. Julius-Maximilians-Universitat Wurzburg, Josef-Schneider-Strasse 2, D-8700 Wurzburg, West Germany / **Treatment of anxiety in children and adolescents./** Zur Behandlung der Angst im Kindes- und Jugendalter. Zeitschrift fur Kinder- und Jugendpsychiatrie. 7(4):344-352, 1979.

Fear as a primeval phenomenon, an essential part of human development, is discussed in contrast to pathological anxieties as precursors and accompaniments of nearly all neurotic and psychotic illnesses. A combined approach is preferred when treating pathological anxieties in children and adolescents. Guidance or treatment of the parents, analytical psychotherapy or behavior therapy of the child or adolescent, and psychopharmacological treatment of the child or adolescent and occasionally the parents all are possible treatments. In the search for new anxiolytic drugs which have the strongest efficacy profiles and fewest side-effects, two open studies and one double-blind study with clobazepam (Frisium), oxprenolol (Trasicor) and nomifensine (Alival) were conducted. The results are discussed. 8 references. (Journal abstract modified)

003350 no author. Council on Scientific Affairs, AMA, 535 N. Dearborn St., Chicago, IL 60610 **Hypnotic drugs and treatment**

of insomnia. Journal of the American Medical Association. 245(7):749-750, 1981.

Reports of two expert committees (one at the National Institute on Drug Abuse and the other at the National Academy of Science Institute of Medicine) on the continued effectiveness of sedative/hypnotic drugs in treating insomnia are reviewed. The reports indicate that despite a variety of problems, these compounds still play an important adjunctive role in the managment of organic disease as well as in the management of insomnia. An effort to curtail the range of pharmacologic choices for use by the physician is criticized. More clinical and epidemiologic studies are recommended, along with emphasis on the diagnosis and management of insomnia and further investigation of the current scientific issues associated with sleep disorders. 5 references.

003351 Nuller, Yu. L.; Tochilov, V. A. Leningradskiy nauchno-issledovatel'skiy psikhonevrologicheskiy institut imeni V. M. Bekhtereva, Leningrad, USSR **/The use of phenazepam in the treatment of psychotic patients./** Opyt primeneniya fenazepama dlya lecheniya bol'nykh psikhozami. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):914-920, 1980.

Phenazepam, a potent anxiolytic tranquilizer, was used in the treatment of 173 mental patients suffering from schizophrenia, endogenous depression, involutional psychoses, and organic psychoses. In all cases the clinical picture was characterized by anxiety. In 37% of the patients the psychopathological symptomatology disappeared altogether, while in another 27% there was significant improvement. The best results were obtained in the treatment of anxious depressive states, depersonalization, and affective delusional states. The effectiveness of phenazepam against depersonalization is considered an indirect confirmation of the proposed theory that anxiety plays the main role in depersonalization. 8 references. (Journal abstract modified)

003352 Ochs, H. R.; Grube, E.; Greenblatt, D. J.; Arendt, R. Greenblatt: Div. of Clinical Pharmacology, Box 1007, New England Medical Ctr. Hospital, 171 Harrison Ave., Boston, MA 02111 **Intravenous quinidine in congestive cardiomyopathy.** European Journal of Clinical Pharmacology. 19(3):173-176, 1981.

A clinical trial of intravenous quinidine in congestive cardiomyopathy is described. Following a single intravenous quinidine infusion, left ventricular (LV) performance was evaluated in the eight Ss by echocardiography at multiple time points during the next 24 hours. Quinidine kinetics and protein binding were determined from multiple serum samples drawn for up to 36 hours after dosage. LV function was not impaired. Instead, quinidine transiently increased ejection fraction and rate of circumferential shortening. Endsystolic and enddiastolic LV internal diameter likewise were decreased. Blood pressure and ventricular rate were not significantly altered. Well controlled, slow intravenous infusion of quinidine does not impair LV performance and is safe for patients with compensated congestive cardiomyopathy. However, such patients may have reduced quinidine clearance and hence require lower doses than expected based on age and weight. 9 references. (Author abstract modified)

003353 Olanow, C. Warren; Finn, Andrew L. Dept. of Medicine (Neurology), Duke University Medical Center, Durham, NC 27710 **Phenytoin: pharmacokinetics and clinical therapeutics.** Neurosurgery. 8(1):112-117, 1981.

The pharmacokinetics and clinical therapeutics of the anticonvulsant medication phenytoin are described. Topics discussed include: bioavailability; volume of distribution; metabolism; clinical management; and side-effects. It is concluded that phenytoin is a highly effective anticonvulsant agent that is generally well tolerated and free of serious side-effects. Serum monitoring is necessary because of individual variations in the pharmacokinetic properties of phenytoin and the potential effects of other drugs and diseases. When a patient continues to have seizures with serum concentrations outside the therapeutic range, it is prefereable to adjust the dose of phenytoin rather than to substitute or add an additional medication. When phenytoin provides no seizure control, it should be discontinued gradually and a different anticonvulsant should be substituted rather than maintaining the patient on both medications. 50 references. (Author abstract modified)

003354 Oyewumi, L. K.; Lapierre, Y. D. Lapierre: Royal Ottawa Hospital, 1145 Carling Avenue, Ottawa, Ontario, Canada K1Z 7K4 **Efficacy of lithium in treating mood disorder occurring after brain stem injury.** American Journal of Psychiatry. 138(1):110-112, 1981.

A single case, double-blind design was used to assess the therapeutic value of lithium in the treatment of recurrent hypomania and depressive symptoms in a 21-year-old patient with brainstem injury. Lithium effectively controlled the patient's severe mood disturbance which occurred after cobalt radiation and invasive brain surgery for a medulloblastoma. The double-blind test period with placebo confirmed that response to lithium was not a placebo effect. Results suggest that in certain selected cases of organic brain disorder, lithium may be a valuable therapeutic agent. 10 references.

003355 Paulson, George W.; Lowery, Howard W.; Taylor, Gordon C. Ohio State University, 931 Chatham Road, Columbus, OH 43221 **Progressive supranuclear palsy: pneumoencephalography, electronystagmography and treatment with methysergide.** European Neurology. 20(1):13-16, 1981.

Clinical material from 15 patients with progressive supranuclear palsy (PSP) is described, and the value of pneumoencephalography (PEG) and electronystagmography (ENG) in confirming the diagnosis is discussed. PEG records of six patients revealed atrophy in the area of the pons and colliculi. ENG records of six patients (four of whom had received PEG) confirmed the defects in extraocular movement. Methysergide, which has been suggested as therapy for PSP, was administered to six patients, with no significant improvement in PSP symptoms. 7 references. (Author abstract modified)

003356 Petti, Theodore A.; Unis, Alan. Western Psychiatric Institute, 3811 O'Hara St., Pittsburgh, PA 15261 **Imipramine treatment of borderline children: case reports with a controlled study.** American Journal of Psychiatry. 138(4):515-518, 1981.

The borderline syndrome of childhood is examined and three case histories are presented to demonstrate its salient features. Each patient failed to benefit from intensive hospital treatment until imipramine (5mg/kg/day) was added to the treatment regimen. One child was treated in a double-blind, imipramine/placebo crossover protocol. Substantial imrovement with imipramine was demonstrated in adaptive peer interactions, compliance, and bizarre behaviors. This strongly supports consideration of imipramine as part of the intensive inpatient treatment of the borderline syndrome in children. 17 references. (Author abstract modified)

003357 Pickar, D.; Davis, G.; Schulz, C.; Extein, I.; Wagner, R. Unit on Studies of Drug Abuse, Biological Psychiatry Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Behavioral and biological effects of acute beta-endorphin injection in schizophrenic and depressed patients.** American Journal of Psychiatry. 138(2):160-166, 1981.

A dose of beta endorphin (4-15mg) was administered intravenously to six schizophrenic and four depressed patients in a

double-blind study. There were neither significant differences in behavioral ratings between these endogenous opioid peptides and placebo for the overall group nor for either schizophrenic or depressed subgroups. Clinical worsening and improvement were observed in individual schizophrenic patients. There was no evidence of late appearing therapeutic effects in four schizophrenic patients rated for 5 consecutive days after placebo and drug infusions. In one patient, 10mg of endorphin produced neuroendocrine effects comparable to that of 5mg i.v. administered methadone. In two other patients, it produced large increases in circulating opioid activity as determined by radioreceptor assay. These biological data support the notion that parenterally administered beta-endorphin exerts significant opiate-like activity in vivo. 56 references. (Author abstract modified)

003358 Pires-de-Oliveira, R. S. Rua 2, 635, 13500 Rio Claro, Brazil **/Action of butriptyline hydrochloride in the gerontopsychiatric patient./** Acao do cloridrato de butriptilina no paciente geronto-psiquiatrico. Jornal Brasileiro de Psiquiatria. 29(2):103-115, 1980.

The action of butriptyline hydrochloride was studied in 50 elderly patients suffering from cerebrovascular insufficiency, who were divided randomly into two groups of 25 Ss each. The first group was administered bencyclane plus butriptyline, while the second group received bencyclane plus placebo. The patients were evaluated subjectively for physical, intellectual, and psychological manifestations and were evaluated objectively with EEGs and the WAIS before and after a period of 60 days' treatment. Results indicate better improvement of the EEG and the WAIS in patients treated with bencyclane plus butriptyline. 19 references. (Journal abstract modified)

003359 Pisani, Francesco D.; Di Perri, Raoul G. Clinica Neurologica dell'Universita, Policlinico G. Martino, I-98013 Contesse, Messina, Italy **Intravenous valproate: effects on plasma and saliva phenytoin levels.** Neurology. 31(4):467-470, 1981.

Plasma and saliva phenytoin was evaluated at fixed time intervals after intravenous administration of 800mg valproate in epileptics chronically treated with phenytoin monotherapy. A significant decrease in plasma and a concurrent significant increase of the drug in saliva (which reflects the free amount in plasma) were observed, with maximal changes occurring at 30 to 90 minutes after valproate infusion. These data indicate that valproic acid is able to diplace phenytoin from plasma proteins, suggesting a critical evaluation of the routine phenytoin plasma levels (which reflect free plus bound fraction) when this drug is administered concurrently with sodium valproate. 19 references. (Author abstract)

003360 Platt, Jane E.; Campbell, Magda; Cohen, Ira L. New York University Medical Center, New York, NY **Effects of lithium carbonate and haloperidol on cognition in aggressive, hospitalized school age children.** Psychopharmacology Bulletin. 17(1):123-125, 1981.

The effects of haloperiodol, lithium, and placebo on the cognitive performance of hospitalized, aggressive schoolage children were assessed as part of a larger study of the therapeutic efficacy of these drug treatments. Children were randomly assigned to one of three treatment groups and were assessed with a series of cognitive tests during the baseline placebo period and after 4 weeks of treatment. Results suggest that for this sample of children, haloperidol has an effect on the ability to maintain a response set. Data indicate that the increased mean reaction time in the haloperidol group reflects a change in attention rather than a general slowing of motor performance. This interpretation is supported by the matching familiar figures task results, in which children on haloperidol responded more quickly on optimal dosage than during baseline testing. A negative effect on Porteus maze qualitative scores was the only cognitive test effect found for lithium. 7 references. (Author abstract modified)

003361 Platt, Jane E.; Campbell, Magda; Green, Wayne H.; Perry, Richard; Cohen, Ira L. Campbell: Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **Effects of lithium carbonate and haloperidol on cognition in aggressive hospitalized school-age children.** Journal of Clinical Psychopharmacology. 1(1):8-13, 1981.

The effects of lithium, haloperidol, and placebo on cognition are reported for a sample of hospitalized school-age children with a behavioral profile of aggressiveness and explosiveness. In this double-blind study, patients were randomly assigned to one of three treatment conditions. The cognitive battery was administered at the end of a 2 week placebo baseline period and again after 4 weeks of treatment. It is included a simple reaction time (RT) task with preparatory intervals of 1, 4, and 8 seconds, the Porteus Mazes, and the Matching Familiar Figures Test. Drug effects on cognitive performance were mild or nonexistent. Slower and more variable RTs were found among the haloperidol group, particularly at the 4 and 8 second preparatory intervals. This effect apparently reflects decreased ability to hold a preparatory set. Lithium caused a deterioration in qualitative performance on the Porteus Maze Test. 43 references. (Author abstract modified)

003362 Polinsky, Ronald J.; Kopin, Irwin J.; Ebert, Michael H.; Weise, Virginia. Laboratory of Clinical Science, NIMH, Bldg 10, Rm 3S-231, 9000 Rockville Pike, Bethesda, MD 20205 **Pharmacologic distinction of different orthostatic hypotension syndromes.** Neurology. 31(1):1-7, 1981.

The pressor responses to vasoactive agents were studied in patients with orthostatic hypotension. Greater than normal slopes of the stimulus response curves inpatients with multiple system atrophy (Shy-Drager syndrome) and idiopathic orthostatic hypotension (IOH) were consistent with deficient reflex modulation. Patients with IOH also had a shift to the left to the plasma norepinephrine blood pressure curves, suggesting denervation supersensitivity. This was consistent with the deficient plasma norepinephrine response to tyramine in these patients. Patients in whom orthostatic hypotension is attended by tachycardia are subsensitive to administered catecholamines, and may suffer from deficient effector organ responsivity. 21 references. (Author abstract)

003363 Porges, Stephen W.; Bohrer, Robert E.; Keren, Gideon; Cheung, Michael N.; Franks, George J.; Drasgow, Fritz. Dept. of Psychology, University of Illinois, Champaign, IL 61820 **The influence of methylphenidate on spontaneous autonomic activity and behavior in children diagnosed as hyperactive.** Psychophysiology. 18(1):42-48, 1981.

The spontaneous autonomic behavior of 13 male and 3 female hyperactive children was examined prior to treatment and following 0.5 or 1mg/kg methylphenidate or placebo. There was a dose related reduction in disruptive classroom behavior and a parallel decrease in a component of heart period variability, V, derived via spectral analysis of heart period activity. The lower dose of methylphenidate, which has been reported to enhance cognitive performance, selectively increased a measure of respiratory/cardiac coupling, Cw, derived via cross-spectral analysis of respiration and heart period activity. It is hypothesized that Cw may be a qunatitative manifestation of brainstem integration and V may be a quantitative estimate of effective vagal tone on the heart. 18 references. (Author abstract modified)

003364 Powers, James S.; Decoskey, Darla; Kahrilas, Peter J. Dept. of Medicine, University Hospitals of Cleveland, Cleveland, OH 44106 **Physostigmine for treatment of delirium tremens.** Journal of Clinical Pharmacology. 21(1):57-60, 1981.

Two patients with complicated delirium tremens were treated successfully with physostigmine. Physostigmine administration resulted in abrupt cessation of the symptoms of delirium tremens and permitted maintenance therapy with low oral doses of benzodiazepines. Results are discussed in relation to the adrenergic/cholinergic imbalance model of delirium tremens. 16 references. (Author abstract modified)

003365 Reid, Andrew H.; Naylor, Graham J.; Kay, David S. G. Strathmartine Hospital, by Dundee DD3 0PG, Scotland **A double-blind, placebo controlled, crossover trial of carbamazepine in overactive, severely mentally handicapped patients.** Psychological Medicine. 11(1):109-113, 1981.

The effect of carbamazepine on 12 severely and profoundly mentally retarded, overactive adult patients was studied in a double-blind, placebo controlled, crossover trial. The trial lasted 7 months and those patients in whom overactivity was the dominant problem responded to some degree to carbamazepine with a reduction in overactivity. This was particularly the case in patients in whom overactivity was accompanied by some elevation of mood. Patients in whom overactivity was part of a wider spectrum of multiple behavior disorders showed a scatter of responses. There was no relationship between response to carbamazepine and the presence or absence of epilepsy. The trial identified a small group of mentally retarded patients in whom carbamazepine might be clinically useful. 9 references. (Author abstract modified)

003366 Reynolds, E. H.; Shorvon, S. D. Dept. of Neurology, Kings College Hospital, Denmark Hill, London S.E. 5, England **Monotherapy or polytherapy for epilepsy?** Epilepsia. 22(1):1-10, 1981.

The utility and clinical efficacy of anticonvulsant polytherapy are reviewed. Polytherapy leads to problems of chronic toxicity, drug interactions, failure to evaluate individual drugs, and sometimes exacerbation of seizures. There are many causes of polytherapy which could be avoided by more careful monitoring and supervision of therapy. Studies in new, previously untreated referrals suggest that there is considerable potential for monotherapy. In the event of failure of optimum monotherapy, there may be scope for careful rationalization to two or sometimes one drug, with reduction in chronic toxicity and sometimes improved seizure control. Reduction of therapy, however, may be impossible or hazardous due to withdrawal seizures. Even after successful reduction, seizure control is much less satisfactory than in new referrals. It is easier to avoid polytherapy than to reduce it. There is a need to define more carefully the limits of effective anticonvulsant therapy. 32 references. (Author abstract modified)

003367 Rodin, Ernst A.; DeSousa, Garcia; Haidukewych, Dan; Lodhi, Rashid; Berchou, Richard C. Epilepsy Center of Michigan, 3800 Woodward, Seventh Floor, Detroit, MI 48201 **Dissociation between free and bound phenytoin levels in presence of valproate sodium.** Archives of Neurology. 38(4):240-242, 1981.

Dissociation between free and bound phenytoin levels in the presence of sodium valproate is reported within the context of a case reported and data from a subsequent study of the relationship between free and bound phenytoin levels in patients receiving the anticonvulsant alone or in combination with other drugs. Findings from previous studies in conjunction with the present data suggest that phenytoin/valproate sodium comedication may lead, at times, to symptoms and signs of phenytoin intoxication, despite plasma levels in the therapeutic range. The importance of supplementing bound level with free level data when combined therapy of this type is used in epileptic patients is emphasized. 14 references. (Author abstract modified)

003368 Saarma, Yu. M.; Saarma, M. M. Tartuskiy universitet, Tartu, USSR **/The role of psychopharmacotherapy in the treatment of elderly patients with organic mental syndromes./** Rol' psikhofarmakoterapii v lechenii bol'nykh pozhilogo vozrasta s organicheskimi psikhicheskimi sindromami. Vestnik Adademii Meditsinskikh Nauk SSSR. No. 12:50-53, 1980.

The role of psychopharmacotherapy in the treatment of elderly patients with organic mental syndromes was studied. A group of 35 patients with moderate atherosclerotic feeblemindedness was treated for 6 weeks with glutamic acid, with a 33% remission rate. Another group of 47 patients with moderate organic mental syndromes was treated for 6 weeks with gamma-aminobutyric acid, with a resulting remission rate of 53%. Results show that the most efficacious drugs for elderly patients with organic mental syndromes are nontropic drugs. Results also show that although psychotropic drugs are important in the combined treatment of elderly patients, they should be used cautiously, and for a clearly formulated purpose, following a thorough examination of the somatic state of the patient, in order to avoid undesirable side-effects which often appear similar to feeblemindedness in elderly patients. 5 references. (Journal abstract modified)

003369 Salzman, Carl. Massachusetts Mental Health Center, 74 Fenwood Road, Boston, MA 02115 **Psychotropic drug use and polypharmacy in a general hospital.** General Hospital Psychiatry. 3(1):1-9, 1981.

The usage of psychotropic drugs by all general inpatients of a Boston teaching and referral hospital was examined on a randomly chosen weekday. Of all surveyed inpatients, 42.8% were receiving at lease one psychotropic medication. Sleep medications were the most frequently prescribed of all drugs. Phenothiazine and neuroleptics were given to control agitation, pain, or nausea, rather than psychosis. Antidepressants were prescribed without notated justification in the medical record, and if given for depression, were underdosed. Diazepam was the most frequently prescribed psychotropic drug after flurazepam. Psychotropic drug polypharmacy was common with the average patient receiving seven different drugs. Remedial approaches to this widespread problem are recommended. 19 references. (Author abstract)

003370 Serrano, Alberto C. Community Guidance Center, 2135 Babcock Road, San Antonio, TX 78229 **Haloperidol -- its use in children.** Journal of Clinical Psychiatry. 42(4):154-156, 1981.

The use of haloperidol in children is reviewed. Haloperidol has proved to be safe and effective in children for relieving psychotic symptoms associated with childhood autism, schizophrenia, and mental retardation. It is the drug of choice for Tourette's syndrome, and may be useful in nonpsychotic hyperactive or aggressive children to control acute episodes, or when the stimulants normally useful in hyperactive children are ineffective. Such children taking haloperidol not only become calmer, but are often better able to respond to other modalities of therapy and to school instruction. Dosage, initially low is increased gradually to minimize drowsiness and extrapyramidal symptoms, the most common side-effects. It is concluded that haloperidol in children is usually well tolerated. 24 references. (Author abstract)

003371 Shakir, Raad A.; Johnson, Ralph H.; Lambie, David G.; Melville, Ian D.; Nanda, Rabindra N. Johnson: Wellington

Clinical School of Medicine, Wellington Hospital, Wellington 2, New Zealand **Comparison of sodium valproate and phenytoin as single drug treatment in epilepsy.** Epilepsia. 22(1):27-33, 1981.

The effects of sodium valproate and phenytoin as single drug treatment in epilepsy were compared. Thirty three epileptic patients were given sodium valproate or phenytoin for periods ranging from 9 to 48 months (mean, 30 months). Any patient who developed a seizure while on the first drug was changed to the other drug, provided the serum level of the first drug was in the accepted therapeutic range. Six required the change from phenytoin to sodium valproate, and three from sodium valproate to phenytoin. Side-effects were not a major problem with either drug during the trial period. Results indicate that sodium valproate may also be used as a single drug in the treatment of several types of epilepsy. 15 references. (Author abstract modified)

003372 Shapiro, Arthur K.; Shapiro, Elaine. Tourette & Tic Laboratory and Clinic, Mount Sinai School of Medicine, 1 Gustave Levy Place, New York, NY 10029 **The treatment and etiology of tics and Tourette syndrome.** Comprehensive Psychiatry. 22(2):193-205, 1981.

The literature and experience in the treatment of over 800 patients with tics and Tourette syndrome are critically assessed to provide a guide for treatment. Medications are classified and discussed according to their neurochemical actions to provide heuristic insights about the etiology of tics and Tourette syndrome. Major groupings examined include the dopamine antagonists and agonists, the serotonin agonists and antagonists, the cholinergic agonists and antagonists, the antidepressants (tricyclics and monoamine oxidase inhibitors), the anticonvulsants, anxiolytic sedative hypnotic drugs, and others (e.g., baclofen, psychotomimetics, propranolol, clonidine). Miscellaneous therapies used in treatment have included psychotherapy, hypnosis, behavior therapy, the Feingold diet, megavitamins, and various surgical procedures. The effectiveness of haloperidol suggests excessive presynaptic levels of postsynaptic sensitivity or normal levels of dopamine. However, the clinical effects of other drugs with known or presumed actions on neurotransmitters and studies of specific neurotransmitters and their enzymes do not support any of the hypotheses about abnormal levels of dopamine or other catecholamines. Evidence supporting various neuroanatomic or neurochemical theories is inconclusive. 28 references. (Author abstract modified)

003373 Siever, Larry J. National Institute of Mental Health, NIH Clinical Center, 10/3D41, Bethesda, MD 20205 **The effect of amantadine on prolactin levels and galactorrhea on neuroleptic-treated patients.** Journal of Clinical Psychopharmacology. 1(1):2-7, 1981.

The effects of amantadine on prolactin levels and galactorrhea in neuroleptic treated patients were investigated. Amantadine was given to 11 psychotic patients, concurrently on neuroleptic medication, who required treatment of neuroleptic induced extrapyramidal side-effects. Five of the 11 patients suffered from galactorrhea, and all of these reported improvement in their galactorrhea on amantadine. Plasma prolactin levels were measured in 8 of the 11 Ss, and there was a significant decrease in these levels for the group. Presumably these effects are due to amantadine's properties as a dopamine agonist and suggest a possible use of amantadine in the treatment of neuroleptic induced galactorrhea. 55 references. (Author abstract modified)

003374 Singer, H. S.; Rabins, P.; Tune, L. E.; Coyle, J. T. Coyle: Dept. of Pharmacology, Johns Hopkins School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205 **Serum haloperidol levels in Gilles de la Tourette syndrome.** Biological Psychiatry. 16(1):79-84, 1981.

Serum levels of haloperidol were measured in eight Gilles de la Tourette syndrome (GTS) patients, whose dosage had been established by clinical response, and results were compared with those found to be therapeutic in schizophrenia. Results indicated that GTS patients responded to remarkably low oral doses of haloperidol; and serum neuroleptic measurements confirmed the presence of extremely low haloperidol levels, thus ruling out the possibility that patients develop high serum levels despite low doses. In contrast to schizophrenic inpatients, GTS Ss demonstrated marked symptomatic improvement with values on the average tenfold lower than the minimal amount associated with therapeutic response in acute schizophrenic psychosis. These results lend support to the hypothesis of a supersensitive dopaminergic receptor site as the pathophysiologic defect in GTS, and raise the question whether haloperidol may act by a different mechanism in GTS patients than in schizophrenics. 13 references.

003375 So, Elson L.; Penry, J. Kiffin. Dept. of Neurology, Bowman Gray School of Medicine, Winston-Salem, NC 27103 **Epilepsy in adults.** Annals of Neurology. 9(1):3-16, 1981.

A review of advances in the management of the adult epileptic over the past decade is presented. The development of practical long-term EEG techniques, with and without simultaneous video recording, has increased diagnostic accuracy and has provided a method for assessing the clinical efficacy and therapeutic serum concentration of antiepileptic drugs. Computerized tomography has enhanced identification of structural brain lesions. New pharmacotherapeutic concepts have developed from a recognition of the pharmacological properties peculiar to each antiepileptic agent and determination of serum drug levels has been utilized to deal with the problem of intraindividual and interindividual pharmacokinetic variability. A review of the literature on pregnancy in epileptic women reveals that a third to a half experience more seizures during pregnancy; and reduced serum levels of most antiepilepsy drugs have been recently observed during gestation. Although infants of epileptic women taking antiepileptic drugs show a two to threefold increase of risk for infant congenital abnormality, teratogenicity has not yet been demonstrated, with the exception of oxazolidinediones. Modest progress in rehabilitation of epileptics has been made, but serious problems still remain. Several prognostic indicators have been reported, but further research is needed. 184 references. (Author abstract modified)

003376 Sovner, Robert; Hurley, Anne. 300 Mount Auburn St., Suite 410, Cambridge, MA 02238 **The management of chronic behavior disorders in mentally retarded adults with lithium carbonate.** Journal of Nervous and Mental Disease. 169(3):191-195, 1981.

The medical literature is reviewed and two case histories are presented regarding the efficacy of lithium carbonate in treating chronic behavior disorders in mentally retarded adults. Available data tentatively support the use of lithium to manage such disorders when they are characterized by life long hyperactivity, aggressiveness, and/or self-mutilation. When lithium is used for this indication, a blood level of approximately 1.0mEq/l is considered necessary, and all patients should be given a drug free trial once a therapeutic effect has been achieved in order to assess the continued need for treatment. Etiological issues, a possible mechanism of action involving lithium's effect on CNS serotonergic activity, and areas for future research are discussed. 22 references. (Author abstract modified)

003377 Summers, William K.; Viesselman, John O.; Marsh, Gary M.; Candelora, Kent. University of Southern California, Los Angeles, CA 90007 **Use of THA in treatment of Alzheimer-**

like dementia: pilot study in twelve patients. Biological Psychiatry. 16(2):145-153, 1981.

THA (1,2,3,4 tetra-hydro-5-aminoacridine), a centrally acting anticholinesterase, was tested in varying intravenous doses with 12 unselected cases of Alzheimer-like senile dementia. Significant improvement in memory testing occurred in six Ss; nine Ss improved in clinical staging. Analysis of results with respect to staging of dementia revealed that the degree of improvement was inversely related to the severity of dementia. Statistical analysis of these data by the Friedman test is detailed. 21 references. (Author abstract)

003378 Sutula, Thomas P.; Sackellares, J. Chris; Miller, James Q.; Dreifuss, F. E. Dreifuss: Dept. of Neurology, University of Virginia School of Medicine, Charlottesville, VA 22908 **Intensive monitoring in refractory epilepsy.** Neurology. 31(3):243-247, 1981.

Forty patients with intractable seizures were studied in an epilepsy unit for an average of 8 weeks with video EEG telemetry and continuous observation by trained personnel. Drugs were administered on the basis of antiepileptic drug measurements and seizure classification determined by clinical observation and telemetry. Seizure frequency was reduced in 24 patients (60%). Unrecognized seizure types were identified in eight patients (20%), and diagnostic classification was changed in 19 patients (47.5%). At least one antiepileptic drug was eliminated in 25 patients (60%), and the average drug reduction per patient was significant. In patients with seizures refractory to conventional outpatient and hospital management, improvement in diagnostic accuracy and refinement in observation techniques result in significant reduction of seizure frequency, elimination of drugs, and limitation of toxicity. 14 references. (Author abstract modified)

003379 Toro-G., Ricardo Jose; Holguin-A., Jorge. Universidad de Antioquia, Medellin, Colombia **/Gilles de la Tourette syndrome./** Enfermedad de Gilles de la Tourette. Revista Colombiana de Psiquiatria. 8(2):146-157, 1979.

The symptomatology and treatment of patients with Gilles de la Tourette syndrome were studied. A sample of six children with the disease were interviewed and examined thoroughly. The children presented tics, vocalizations, coprolalia, and sexual impulses. Two children demonstrated abnormal EEG patterns, and one child showed epileptic symptoms. The children were treated with haloperidol, which appeared to improve the symptoms. It is recommended that low doses of haloperidol be continued and then gradually increased. 13 references.

003380 Tu, Jun-bi. Penrose Division, Ongwanada Hospital, 752 King Street, Kingston, Ontario, Canada K7L 4X3 **Phenylketonuria: the inadvisability of neuroleptic medication.** Biological Psychiatry. 15(5):797-802, 1980.

The use of neuroleptic medications in two disturbed phenylketonuria patients was studied over a period between 4 and 5 years. The outcome of clinical observation, supported by the neurochemical findings, suggests that most neuroleptic medications may be less than indicated for treating these patients. The observation provides an important example of how an adverse neuroleptic drug response can be predicted by baseline biochemical measures which are closer to the basic pathophysiology of the condition and the site of psychotropic drug action. 19 references. (Author abstract)

003381 Umstead, Greg S.; McKernan, Thomas. College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, MI 48202 **Phenytoin concentrations in venous versus capillary blood of geriatric patients.** Journal of the American Geriatrics Society. 29(1):34-36, 1981.

In 15 elderly patients who had seizure disorders, venous blood (standard venipuncture) was compared with capillary blood (finger lancet puncture) as the source of the specimen for determination of serum phenytoin concentration. All patients at the time of collection were taking an oral phenytoin preparation for control of seizures. The values obtained by the two procedures were similar. The mean serum phenytoin levels in the venous samples was 17.3mcg/ml, and in the capillary samples 17.0mcg/ml; the paired t test showed no statistical difference. It is concluded that either method provides an adequate blood sample for determination of phenytoin, and both may be used interchangeably. Capillary samples may be preferable for aged patients in whom venipuncture proves difficult or painful. 19 references. (Author abstract)

003382 Villa, D.; Armocida, G.; Mayeron, M. A. Ospedale Neuropsichiatrico Provinciale, Varese, Italy **/Intracellular lithium: its value in the prediction of a positive response to lithium./** La litiemia intracellulare: suo valore nel predire una risposta positiva al litio. Minerva Psichiatrica. 21(1):49-54, 1980.

Cellular lithium values are discussed with reference to an original study. The red cell lithium/plasma ratio is a variable associated with the positive response to treatment with lithium carbonate. Lithium/plasma ratio levels are high in persons with positive responses and low in nonresponders. These findings in the literature are confirmed by a study conducted at a psychiatric hospital with nine responders and eight nonresponders. The marked difference in ratio values is consistent with the correlation demonstrated between this parameter and the efficacy of the response to treatment with lithium carbonate. 35 references. (Journal abstract modified)

003383 Volavka, Jan; Simeon, Jovan; Simeon, Susan; Cho, Dong; Reker, Dean. Manhattan Psychiatric Center, Ward's Island, NY 10035 **Effect of piracetam on EEG spectra of boys with learning disorders.** Psychopharmacology. 72(2):185-188, 1981.

Piracetam was compared with placebo in a double-blind, crossover study of 30 learning disabled boys. Power spectral analyses revealed that piracetam caused a decrease in the amount of delta activity and an increase in the average EEG frequency. This result is in agreement with findings obtained by other workers in adult patients. It is suggested that some clinical effects of piracetam may be mediated by increased alertness and/or decreased fatigue. 11 references. (Author abstract modified)

003384 Vovin, R. Ya.; Gurevich, Z. P.; Skorik, A. I.; Zatonskaya, M. S.; Kyunnapu, I. V. Otd. klinicheskoy psikhofarmakologii Leningradskogo nauchno-issled. psikhonevrologicheskogo inst. im. V. M. Bekhtereva, Leningrad, USSR **/On the intensive treatment of endogenous psychoses./** Ob intensivnoy terapii endogennykh psikhozov. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):909-914, 1980.

An experiment to determine the effects of various treatment methods on patients suffering from severe endogenous psychoses was conducted using 170 subjects, of whom 100 were treated with intensive methods and 70 with traditional methods. It was found that a reduction in hospitalization time was possible in the case of those given the intensive treatment, which included intravenous drip administration of drugs with rapidly increasing dosage, rapid neuroleptization, and combinations of psychotropic drugs with other biological treatment. It is concluded that such intensive therapy is desirable only in acute psychoses and only during their early stages. 19 references. (Journal abstract modified)

003385 Vroulis, George A.; Smith, Robert C.; Brinkman, Samuel; Schoolar, Joseph; Gordon, Jack. Section of Biological Psychiatry, Texas Research Institute of Mental Sciences, Medical Center, Houston, TX **The effects of lecithin on memory in patients with senile dementia of the Alzheimer's type.** Psychopharmacology Bulletin. 17(1):127-128, 1981.

The effects of lecithin on memory and learning were studied in 18 patients with symptoms consistent with senile dementia of the Alzheimer type (SDAT). Preliminary results indicate that nine out of 15 patient improved in the total recall subscale of the Buschke Selective Reminding (BSR) procedure, with six out of 15, eight out of 15, and 10 out of 15 improving on the short-term recall, long-term recall, and long-term storge subscales of the BSR, respectively. Lecithin treatment also significantly reduced two cholesterol risk ratios: total cholesterol per high density lipoprotein and total cholesterol per low density lipoprotein. These lipid ratios have been shown to be correlated with the development of atherosclerosis. 12 references. (Author abstract modified)

003386 Walker, Mary Klotz. University of Illinois at the Medical Center **Effects of methylphenidate hydrochloride on repeated acquisition behavior in hyperkinetic children. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2561-B, 1981. Ann Arbor, Univ. Microfilms No. 8021326, 123p., 1980.

The effects of two therapeutic doses or orally administered methylphenidate hydrochloride or placebo on the learning behavior maintained by a repeated acquisition task in hyperkinetic children were examined with 18 children aged 6 to 12.5 years. Two hours after drug administration the Ss performed two repeated acquisition sequences. Each child was reinforced for the successful completion of the appropriate response requirement irrespective of the amount of time to successful completion. The primary treatment effects on the dependent variable, mean error, are attributable to the error decreasing effect of the methylphenidate hydrochloride. The repeated acquisition task constitutes an efficient method of investigating the effects of therapeutic doses of stimulant drugs on learning behavior in hyperkinetic children by maintaining a behavior which is sensitive to drug effect within the narrow range commonly administered to children. (Journal abstract modified)

003387 Walter, L. Kinderneuropsychiatrische Poliklinikum Abteilung, Betriebskrankenhaus, Poliklinikum, Hoyerswerda, West Germany **/On the evaluation of a provocative EEG method using medication in the diagnosis of organic brain seizures in childhood, with special emphasis on sleep induction through medication./** Zur Einschatzung medikamentoser Provokationsmethoden des EEG bei der Diagnostik hirnorganischer Anfallsleiden im Kindesalter unter besonderer Berucksichtigung der medikamentosen Schlafinduktion. Zeitschrift fur Arztliche Fortbildung. 73:257-262, 1979.

Sleep induction by the tranquilizer Sinophenin promazine was investigated using the EEG in a study of 145 children and adolescents ranging up to age 16. Different dosages of the drug were administered according to age and weight. The correlation between the obtained clinical and bioelectrical diagnoses was considered in relation to ontogenetic brain development. The relation of the particular type of organic brain seizure to S's age, the wake and sleep rhythms, and the pharmacological changes causing modification of this rhythm are discussed. (Journal abstract modified)

003388 Weingartner, Herbert; Gold, Philip; Ballenger, James; Smallberg, Sheila; Summers, Richard; Rubinow, David; Post, Robert; Goodwin, Frederick NIMH, Bethesda, MD 20205 **Effects of vasopressin on human memory functions.** Science. 211(4482):601-603, 1981.

The effects of arginine vasopressin on human memory functions were investigated. One of its synthetic analogs, 1-desamino-8-D-arginine vasopressin (DDAVP) was administered for a period of several days to cognitively unimpaired as well as cognitively impaired adults. Both groups learned information more effectively as measured by the completeness, organization, and consistency (reliability) of recall. DDAVP also appeared to reverse partially the retrograde amnesia that follows electroconvulsive treatment. 15 references. (Author abstract)

003389 Wender, Paul H.; Reimherr, Frederick W.; Wood, David R. Dept. of Psychiatry, University of Utah, 50 N. Medical Dr., Salt Lake City, UT 84132 **Attention deficit disorder ('minimal brain dysfunction') in adults: a replication study of diagnosis and drug treatment.** Archives of General Psychiatry. 38(4):449-456, 1981.

An attempt was made to replicate an earlier study dealing with the diagnosis and treatment of attention deficit disorder (ADD or minimal brain dysfunction) in adults. Subjects who met provisional operational criteria for adult ADD were entered in a random assignment, parallel, double-blind trial of placebo and pemoline, a noneuphorigenic psychostimulant drug effective in children with ADD. There was improvement in both the pemoline group and the placebo group, but the difference in improvement was not statistically significant. When the analyses were confined to that subgroup of patients whose parents had described them in the 95th percentile of childhood hyperactivity or when the hyperactivity score was partialled out statistically, pemoline was demonstrably more effective than placebo. Revised operational criteria for adult ADD are proposed. 55 references. (Author abstract modified)

003390 Wenzel, Ulf. Landshuter Strasse 65, D-8400 Regensburg, West Germany **/Lithium treatment of the Kleine-Levin syndrome./** Therapie mit Lithium beim Kleine-Levin-Syndrom. Zeitschrift fur Kinder- und Jugendpsychiatrie. 7(3):219-220, 1979.

The usefulness of lithium in juvenile insomnia, and especially in the Kleine-Levin syndrome, is discussed in the light of recent findings that recurrence of hypersomniac episodes is potentially preventable in adolescents by administering lithium carbonate. Long-term controlled treatment with lithium promises to be effective in the prophylaxis of the Kleine-Levin syndrome. In cyclothymic psychoses, however, the prophylactic effects of lithium are limited on account of slow absorption. 2 references. (Journal abstract modified)

003391 Wittenborn, J. R. Interdisciplinary Research Center, Rutgers University, New Brunswick, NJ 08903 **Pharmacotherapy for age-related behavioral deficiencies.** Journal of Nervous and Mental Disease. 169(3):139-156, 1981.

A distinction is made between drugs for treating age related behavioral losses or impairments among the elderly (Ss age 65 and older) and the psychopharmacotherapeutic drugs used in treating disturbed or disordered behavior in adults of various ages. Placebo controlled studies confirm numerous responses to drugs designed specifically for treating impaired behavior in the aged, and the responses of normal or mildly impaired Ss to some of these drugs suggest the possibility of prophylactic applications. The various drug classes include compounds affecting circulatory and metabolic activity and familiar psychotropic medications (major and minor tranquilizers, stimulants, and antidepressants). 156 references. (Author abstract modified)

003392 Wysocki, Tim; Fuqua, Wayne; Davis, Vicky J.; Breuning, Stephen E. Fuqua: Dept. of Psychology, Western Michigan University, Kalamazoo, MI 49008 **Effects of thioridazine (Mellaril) on titrating delayed matching-to-sample performance of mentally retarded adults.** American Journal of Mental Deficiency. 85(5):539-547, 1981.

The effects of thioridazine on the performance of a titrating delayed matching to sample discrimination by four retarded adults were examined. The delay between depression of a center response panel and presentation of two comparison stimuli on the side response panels varied according to the accuracy of the Ss' performance. The primary dependent variable was the limit of delay, defined as the longest delay at which the Ss emitted four consecutive correct responses in a 30 minute session. The Ss chronic doses of thioridazine were reduced systematically in a multiple baseline across subjects design. For all Ss, the limit of delay increased only after reductions in the daily thioridazine dose had been implemented. Results indicate that the withdawal of chronically administered thioridazine results in increased accuracy in a delayed matching to sample task. Findings suggest that the drug repairs performance of this discrimination. 28 references. (Author abstract modified)

003393 Yesavage, Jerome A.; Westphal, James; Rush, Leonard. Dept. of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Palo Alto, CA 94305 **Senile dementia: combined pharmacologic and psychologic treatment.** Journal of the American Geriatrics Society. 24(4):164-171, 1981.

Either supportive counseling (SC) or cognitive training (CT) was used to enhance the efficiency of a standard pharmacologic treatment for dementia, dihydroergotoxine mesylate (DEM). DEM was administered orally to 21 moderately demented subjects, in a dosage of 1mg three times daily; and SC or CT was conducted for 1 hour every 2 weeks for a total of 12 weeks. The CT was designed to enhance memory and other intellectual functions by the teaching of organizational schemes and mnemonic devices. The DEM plus CT group of patients improved more than did the DEM plus SC group for the measures of memory and learning. However, no differences are noted between groups for the Hamilton Rating Scale for Depression or Sandoz Clinical Assessment-Geriatric behavioral measures. 44 references. (Author abstract modified)

003394 Yudofsky, Stuart; Williams, Daniel; Gorman, Jack. Dept. of Psychiatry, Columbia University College of Physicians and Surgeons, 722 West 168th St., New York, NY 10032 **Propranolol in the treatment of rage and violent behavior in patients with chronic brain syndromes.** American Journal of Psychiatry. 138(2):218-220, 1981.

The successful treatment of four patients with irreversible CNS lesions and socially disabling aggressiveness and outbursts of rage is reported. The patients' behavior, which had not been affected by high doses of major tranquilizers or anticonvulsants, were treated with 320-520mg/day of propranolol. Disorientation, memory impairment, and psychotic thought processes associated with the CNS lesions were not altered by the drug. 7 references. (Author abstract modified)

12 PSYCHOTOMIMETIC EVALUATION STUDIES

003395 Jacobs, Rosevelt, Nowell, Maxine. Dept. of Psychiatry, Charles R. Drew Postgraduate Medical School, 12021 S. Wilmington Avenue, Los Angeles, CA 90059 **Phencyclidine hydrochloride: a challenge to medicine.** Journal of the National Medical Association. 73(2):170-172, 1981.

An overview of phencyclidine hydrochloride (PCP) abuse and its management is presented. PCP first became available as a street drug in 1967 and is one of the most dangerous of the drugs of abuse. Its use is most prevalent among adolescents and young adults. In subanesthetic doses, PCP's effects proceed in three stages: changes in body image, sometimes accompanied by depersonalization; perceptual distortions and visual or auditory hallucinations; and feelings of apathy and suicidal ideation. Many users have reacted with acute psychotic episodes; because of the often bizarre and dangerous behavior, PCP abuse has an enormous impact upon the abuser's family. PCP psychosis, accompanied by paranoia, hostility, unpredictability, and a tendency toward violence constitutues a psychiatric emergency. Treatment requires prompt hospitalization, haloperidol, and group psychotherapy after the acute phase has passed. Because of the hazards associated with PCP abuse, the need for public education is emphasized. 7 references.

003396 Schultzes, Richard E.; Hoffmann, Albert. no address / **The world of hallucinogenic plants.**/ Plants of the Gods. London, Hutchinson, 1980. L12.95.

Following a discussion of the meaning of terms such as hallucinogenic, narcotic, and psychotomimetic, a review of the plant kingdom is presented focusing on the presence or absence of hallucinogens in each group of plants and their geographic distribution. The manner in which the hallucinogenic principles have been isolated is described, and a plant lexicon is presented which reviews the botanical and other properties of the 91 principle hallucinogenic plants. Use of hallucinogenic plants among aboriginal and primitive peoples for magical, religious, and medical purposes is then considered. Finally, the chemical structure of the hallucinogens and their use in modern medicine is examined. Illustrations are provided.

003397 Yamamoto, Tsuneyuki; Ueki, Showa. Dept. of Pharmacology, Kyushu University, Maidashi 3-1-1, Higashi-ku, Fukuoka 812, Japan **The role of central serotonergic mechanisms on head-twitch and backward locomotion induced by hallucinogenic drugs.** Pharmacology Biochemistry and Behavior. 14(1):89-95, 1981.

Head twitch induced in female Wistar King-A rats by lysergic acid diethylamide, mescaline, or 2,5-dimethoxy-4-methylamphetamine (DOM) was significantly increased by medial raphe (m-R) lesions, but not by dorsal raphe (d-R) lesions. Hallucinogen induced head twitch was inhibited by methysergide and increased by p-chlorophenylalanine (PCPA). Backward locomotion induced by DOM was reversed by m-R lesions, combined m-R and d-R lesions, or methysergide, but not by d-R lesions or PCPA. 28 references. (Author abstract modified)

13 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

003398 Andreyeva, O. G.; Meyerson, Ya. A.; Shchelkunov, Ye. L. Psikhonevrologicheskiy institut im. V. M. Bekhtereva, Leningrad, USSR /**The stimulating effect of amphetamine on the visual system.**/ Stimuliruyushcheye vliyaniye fenamina na zritel'nuyu sistemu. Fiziologiya Cheloveka. 6(3):440-446, 1980.

The stimulating effect of amphetamine on the visual system was studied with the aid of a two channel electronic optical tachistoscope. Results show that: 1) amphetamine in a 15 to 20mg dose (.024 to 0.29mg/kg) exerts a stimulating effect on the human visual system according to the criterion of liminal recognition time of visual images; 2) pimozide in a 4mg dose (0.05 to 0.08mg/kg) does not exert a depressant influence on visual functioning; 3) pimozide blocks the stimulating effect of amphetamine on the visual system; and 4) the dihydroxyphenylalanine aminergic component of the action of amphetamine may play a

leading role in stimulating the human visual system. 31 references.

003399 Aronson, Jeffrey K.; Grahame-Smith, David G. MRC Unit and University Dept. of Clinical Pharmacology, Radcliffe Infirmary, Oxford, England OX2 6HE **Clinical pharmacology: adverse drug interactions.** British Medical Journal. No. 6260:288-291, 1981.

The incidence and mechanisms of adverse drug interactions are examined, and examples of clinically important interactions are cited. In general, when two drugs interact one precipitates the interaction while the other is the object of the interaction. Three types of drug interactions are pharmaceutical, pharmacokinetic, and pharmacodynamic. Pharmaceutical interactions are those of a drug either with another drug in the same infusion solution or with the infusion solution itself. Ways to avoid such interactions are noted. Pharmacokinetic interactions are those interactions in which the disposition of the object drug is altered in some way by the precipitant drug. These interactions can be considered according to the altering of absorption, protein binding, metabolism, active transport, or excretion. Pharmacodynamic interactions may be either direct or indirect. The most common direct pharmacodynamic interactions are those resulting from drugs acting on the central nervous system. Sources of information about drugs interactions are listed. 9 references.

003400 Barber, H. E.; Petrie, J. C. Dept. of Pharmacology, University of Aberdeen, Aberdeen AB9 2ZD, Scotland **Clinical pharmacology: elimination of drugs.** British Medical Journal. No. 6266:809-810, 1981.

The principles of drug elimination, primarily by the liver and kidneys, are outlined. Most elimination processes of drugs follow first-order elimination kinetics. In such processes, a defined and constant fraction of the drug is irreversibly eliminated in a constant time. The half-life time in such first-order processes is the time taken for the drug concentration to fall to half its original value. Some drugs, such as ethyl alcohol, follow zero-order elimination kinetics. In these processes, elimination occurs at a constant rate because the enzymes necessary for drug metabolism and the active excretion processes become saturated. Factors affecting drug clearance include the lipid solubility of the drug, the rate of delivery of the drug to the organs of elimination, and the capacity of the organs of elimination. 6 references. (Author abstract modified)

003401 Barkin, R. M.; Weston, W. L.; Humbert, J. R.; Maire, F. Dept. of Pediatrics, University of Colorado Health Sciences Center, 4200 East Ninth Ave., Denver, CO 80262 **Phagocytic function in Down syndrome -- I. Chemotaxis.** Journal of Mental Deficiency Research. 24(4):243-249, 1980.

The influence of trisomy 21 on phagocytic function was investigated in 14 Down syndrome and 15 matched institutionalized controls, and a nonmatched comparison normal group representing noninstitutionalized young adults. Neutrophil chemotaxis in both institutionalized groups was significantly impaired. Monocyte chemotaxis was also lower than that of normal Ss. Evaluation of humoral components of neutrophil chemotaxis revealed no significant differences between the two institutionalized groups. Down syndrome Ss had diminished monocyte chemotactic responses compared with the other two groups. The results have implications for studies of the increased incidence of bacterial and viral infections in Down syndrome individuals and in other chromosomal abnormalities. 26 references. (Author abstract modified)

003402 Brown, Gregory M.; Grof, Eva; Grof, Paul. Dept. of Neurosciences and Psychiatry, McMaster University, Hamilton, Ontario Canada **Neuroendocrinology of depression -- a discussion.** Psychopharmacology Bulletin. 17(1):10-12, 1981.

The effects of lithium chloride administration on neuroendocrine function in normal volunteers were investigated, and selected studies of the neuroendocrinology of depression are reviewed. Three volunteers received lithium for 3 weeks, and growth hormone, luteinizing hormone, and prolactin response to insulin hypoglycemia and to combined thyroid releasing hormone and luteinizing hormone releasing hormone were examined. Lithium treatment resulted in a pronounced attenuation, both in the growth hormone response to insulin hypoglucemia and also in the prolactin response to hypoglycemia. This highly specific effect on the hypolglycemia response cannot be explained through an effect on dopamine systems, as dopamine mechanisms exert opposing effects on growth hormone and prolactin. Methodological implications are noted. 12 references. (Author abstract modified)

003403 Caille, Emile-Jean. Centre d'Etude et de Recherche de Psychologie Appliquee, F-83800 Toulon, France /**Study of the effects of PC-63-14 on the quantified EEG.**/ Etude des effects due PC 63-14 sur l'E.E.G. quantifie. Psychologie Medicale. 12(10):2237-2246, 1980.

Th effects of PC-63-14 (potassium salt of acetylaminosuccinic acid) on the quantified EEG were studied. A double-blind crossover comparison of PC-63-14 and placebo was undertaken under normal atmospheric conditions in 12 volunteer subjects, 6 of whom were diagnosed as being anxious. The drug or placebo was administered for 14 days, and each study period was separated by a 7 day washout period. Spectral analysis of the EEG tracing shows that PC-63-14 exerted a psychoanaleptic effect on the right hemisphere and facilitated interhemispheric coordination. 5 references. (Journal abstract modified)

003404 Caridroit, Marguerite; Tauziede-Castel, Catherine; Caridroit, Michel; Fontan, Michel. Lab. de la Chaire d'Hydrologie therapeutique et climatologie, Cedex U.E.R. de medecine, 1, place de Verdun, F-59045 Lille Cedex, France /**Abnormal transmethylation reaction during the metabolism of dopamine, tryptamine, and serotonin, and schizophrenic symptoms: a critical review.**/ Reaction de transmethylation anormale de la dopamine, de la tryptamine et de la serotonine et symptomes schizophreniques: revue critique. Psychologie Medicale. 12(11):2405-2420, 1980.

Transmethylation during the metabolism of dopamine and serotonin in schizophrenics is examined. Certain similarities exist between some schizophrenic symptoms and psychic disturbances induced by psychodysleptic drugs, and structural similarities were found between these drugs and chemical mediators. Characteristics of abnormal transmethylation are: concentration of S-adenosyl-L-methionine, enzyme activity of methoxylation and of N-methyl-transferase, excess of 5-methyltetrahydrohomo folic acid, and enzyme activity of MAO. The three amines which were found to be connected to this problem are: 4-methylenedioxyamphetamine, 3,4-dimethoxyphenethydamine, and 6-hydroxydopamine. 101 references. (Journal abstract modified)

003405 Diamond, Eric L.; Carver, Charles S. Dept. of Psychology, PO Box 248185, University of Miami, Coral Gables, FL 33124 **Sensory processing, cardiovascular reactivity, and the type A coronary-prone behavior pattern.** Biological Psychology. 10(4):265-275, 1980.

An investigation was conducted of the hypothesis that the two modes of sensory processing known to elicit integrated patterns of cardiovascular reactivity will arouse exaggerated re-

sponses in type-A coronary prone individuals. Fifteen (15) type-A and 10 type-B male college students performed on two tasks calling for sensory intake and sensory rejection, respectively, while being monitored for heartrate, blood pressure, and vasomotor response. Contrary to prediction, the tasks failed to differentiate the groups, although each task appeared to elicit the expected pattern of cardiovascular response across groups. It is suggested that sensory processing tasks per se may be insufficiently challenging to elicit the characteristic hyperresponsivity of the type-A. 34 references. (Author abstract)

003406 Eisler, Toomas; Eng, Nancy; Plotkin, Charles; Calne, Donald B. Calne: Experimental Therapeutics Branch, NINCDS, NIH, Bethesda, MD 20205 **Absorption of levodopa after rectal administration.** Neurology. 31(2):215-217, 1981.

Absorption of levodopa was studied in 12 parkinsonian patients after administration by mouth and rectum. Given by mouth, levodopa benefited all 12 patients studied, and levodopa blood levels rose significantly. When it was given rectally, there was no rise in levodopa concentration in the blood and no clinical benefit. Rectally administered levodopa is therefore of no value in the management of postoperative parkinsonian patients who cannot take oral medication. 13 references. (Author abstract modified)

003407 Friedhoff, Arnold J.; Miller, Jeannette C. Dept. of Psychiatry, New York University School of Medicine, New York, NY **Nongenetic factors affecting human platelet monoamine oxidase.** Psychopharmacology Bulletin. 17(1):101-103, 1981.

Research studies of nongenetic factors affecting human platelet monoamine oxidase (MAO) are reviewed. It is noted that MAO activity as measured in the usual assay in platelets, can be considered to be a function of at least four major factors: 1) the status of the MAO gene; 2) nongenetic factors affecting the MAO enzyme protein; 3) factors affecting the assay; and 4) nongenetic factors affecting the platelet, and thereby secondarily altering the apparent MAO activity. Studies concerning the influence of neuroleptic regimens on MAO levels in schizophrenic patients are cited. 12 references. (Author abstract modified)

003408 Garcia-Sevilla, Jesus A.; Zis, Athanasios P.; Zelnik, Thomas C.; Smith, Charles B. Smith: Dept. of Pharmacology, University of Michigan Medical School, Ann Arbor, MI 48109 **Tricyclic antidepressant drug treatment decreases alpha2-adrenoreceptors on human platelet membranes.** European Journal of Pharmacology. 69(1):121-123, 1981.

Chronic administration of imipramine to psychiatric patients led to a significant decrease (35%) in the number of high affinity binding sites for 3H-clonidine on their blood platelet membranes. The number of alpha2-receptor binding sites was also reduced on platelets from a depressed patient treated with nortriptyline (75mg/day for 5 weeks). Binding parameters in drug free patients did not differ from those in a normal control population. Tricyclic antidepressant drugs also inhibited the binding of 3H-clonidine to platelet membranes in vitro, but this inhibition was competitive and not associated with a change in the number of binding sites. Results suggest that the specific binding of radiolabelled alpha2-receptor ligands to human platelet membranes may be a useful test of therapeutic responsiveness in endogenous depression and other clinical disorders that involve altered noradrenergic function. 5 references.

003409 Gorman, Jack M.; Fyer, Abby F.; Gliklich, Jerry; King, Donald; Klein, Donald F. New York State Psychiatric Institute, 722 West 168th St., New York, NY 10032 **Effect of sodium lactate on patients with panic disorder and mitral valve prolapse.** American Journal of Psychiatry. 138(2):247-249, 1981.

A group of 16 panic disorder patients with mitral valve prolapse were studied to determine if they were also sensitive to sodium lactate and, if so, whether the infusion test response would distinguish them from patients without prolapsed mitral valve. The presence or absence of such a valve had no influence on induction of a panic attack by sodium lactate, and the evidence suggests that panic disorder is a single entity. Further research is recommended to study the types of other types of stress attacks in patients with anxiety neurosis. 10 references.

003410 Greenblatt, David J. Div. of Clinical Pharmacology, Box 1007, New England Medical Center Hospital, 171 Harrison Ave., Boston, MA 02111 **Clinical pharmacokinetics of oxazepam and lorazepam.** Clinical Pharmacokinetics. 6(2):89-105, 1981.

The clinical pharmacokinetics of oxazepam and lorazepam, 3-hydroxy benzodiazepine derivatives used as sedatives and anxiolytics, are reviewed. The major metabolic pathway for both compounds involves conjugation to glucuronic acid at the 3-position, followed by urinary excretion of the inactive glucuronide metabolite. Oxazepam has been administered to humans by the oral route only. Usual ranges for kinetic parameters are: elimination half-life, 5 to 15 hours; volume by distribution, .6 to 2L/kg; and clearance, .9 to 2ml/min/kg. Age and liver disease have a minimal influence on oxazepam kinetics, but renal disease is associated with prolonged half-life and increased volume of distribution. Typical kinetic values for lorazepam are: elimination half-life, 8 to 25 hours; volume of distribution, 1 to 1.3L/kg; and clearance, .7 to 1.2ml/min/kg. Lorazepam clearance is somewhat reduced in old age, but liver disease has a minimal effect on clearance. Oral and intramuscular lorazepam are rapidly absorbed, with systemic availability averaging 90% or more. Both drugs are extensively bound to plasma protein, but the free fraction for lorazepam (8% to 12%) is greater than that for oxazepam (2% to 4%). 59 references. (Author abstract modified)

003411 Halbreich, Uriel; Asnis, Gregory M.; Halpern, Frieda; Tabrizi, Mary Ann; Sachar, Edward J. Montefiore Hospital and Medical Center, 111 East 210th St., Bronx, NY 10467 **Diurnal growth hormone responses to dextroamphetamine in normal young men and postmenopausal women.** Psychoneuroendocrinology. 5(4):339-344, 1980.

In normal postmenopausal women, growth hormone (GH) response to dextroamphetamine was found to be small and significantly less than that seen in young normal men. In postmenopausal women, but not in young men, the GH response to amphetamine was significantly higher in the evening than in the morning. The reduced GH responses to dextroamphetamine in postmenopausal women may be due to sex difference, hypoestrogenism, or to reduced brain catecholamines associated with age. The diurnal variation of the GH response to d-amphetamine in postmenopausal women may reflect a diurnal variation in hypothalamic noradrenergic activity which was not masked by a reciprocal variation in estradiol levels. 24 references. (Author abstract modified)

003412 Herrmann, W. M.; Hofmann, W.; Kubicki, St. Institut fur Arzneimittel des BGA, Postfach 330013, D-1000 Berlin 33, West Germany **Psychotropic drug induced changes in auditory averaged evoked potentials: results of a double-blind trial using an objective fully automated AEP analysis method.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 19(2):56-62, 1981.

An automated procedure was used to study the effects of single oral doses of diazepam (10mg), dextroamphetamine (20mg), amitriptyline (75mg), haloperidol (3mg), and placebo on the auditory averaged evoked potential (AEP) in 15 healthy male volunteers. Diazepam and amytriptyline increased the la-

tency for early components and decreased latency for late components. Dextroamphetamine decreased the latency of early components and increased the latency of late components. Amitriptyline and diazepam produced an area shift from the early to late AEP. Dextroamphetamine did not influence the AEP distribution, but produced a general decrease in amplitude, as did diazepam. Haloperidol had only slight effects on the AEP. Component P3 was decreased by dextroamphetamine and placebo, but increased by diazepam, amitriptyline, and haloperidol. 19 references. (Author abstract modified)

003413 Itil, Turan M.; Schneider, Sid J.; Fredrickson, John W. Division of Biological Psychiatry, Dept. of Psychiatry, New York Medical College, Valhalla, NY **The replicability of the psychophysiological effects of diazepam.** Biological Psychiatry. 16(1):65-70, 1981.

The replicability of the psychophysiological effects (central and peripheral) of diazepam was examined in seven healthy, White male Ss. Ss reported for 12 sessions with at least 48 hr between sessions; Ss received either placebo or 10mg diazepam and computerized EEG (CEEG) and electrodermal readings were obtained 1 and 3 hr later. In each of the 10 diazepam sessions, diazepam induced increased in frequencies below 7.5 cycle/sec and above 20 cycle/sec and decreases in alpha (7.5 to 13 cycle/sec) activity in the primary wave, and increases between 20 and 40 cycle/sex in the first derivative. When each of the CEEG profiles were classified based on the HZI Data Base of Psychotropic Drugs, the response in every session was classified as anxiolytic. Electrodermal data yield a similar picture; diazepam generally lowered skin conductance level, and to a greater extent than placebo. Results replicate previous findings and indicate that these results are replicable across repeated measures. 11 references.

003414 James, Angela L.; Barry, Robert J. Barry: School of Education, University of New South Wales, Kensington 2033, Australia **Habituation of electrodermal and respiratory responses to visual stimuli as a function of personality differences in affect level.** Biological Psychology. 10(4):253-264, 1980.

The relationship between personality level of affect and habituation of electrodermal and respiratory measures was examined in two groups of normal Ss designated low P (LP) and high P (HP) according to the psychoticism (P) scale of the Eysenck Personality Questionnaire. Experiment 1 examines changes as a function of repeated presentation of simple visual stimuli. Group HP displayed reduced habituation rates for both respiratory pause and skin resistance response, although initial reactivity levels were similar for both groups. This effect was confirmed more strongly in Experiment 2, which utilized a simple counting task and groups more widely separated on P. The implications of these group differences are discussed in relation to the psychophysiological functioning of autistic children. 23 references. (Author abstract)

003415 Kawahara, Ryuzo; Hazama, Hidebumi; Fukuhara, Tomokazu; Takeshita, Hisayoshi; Tamura, Tatsuyoshi. Dept. of Neuro-psychiatry, Tottori University School of Medicine, Yonago 683, Japan **Biological effects of chlorpromazine in chronic schizophrenics. I. With reference to pituitary hormones.** Kyushu Neuro-Psychiatry. 26(1):111-119, 1980.

Biological effects of chlorpromazine in chronic schizophrenics were investigated. Ss were 11 schizophrenics and 13 normal Ss. The doses of 0.2mg/kg of chlorpromazine were injected intramascularly into 11 schizophrenics and 8 normal men, and their blood samples were checked; the doses of 1.2ml to 1.4ml of physiological saline were injected intramuscularly into the other 5 normal men. Blood prolactin secretion in both groups increased after clorpromazine injection; the prolactin secretion of the schizophrenic group reached a maximum with a shorter latency period than that of the normal group after injection, and the growth hormone secretion in both groups increased after chlorpromazine injection. More cases of hyposecretion or hypersecretion were found among schizophrenics. The cortisol secretion was suppressed after chlorpromazine injection in both groups; thyroid stimulating hormone secretion showed no change. 29 references. (Author abstract modified)

003416 Kawahara, Ryuzo; Hazama, Hidebumi; Fukuhara, Tomokazu; Takeshita, Hisayoshi; Kayano, Masao; Hikita, Toru. Dept. of Neuro-psychiatry, Tottori University School of Medicine, Yonago 683, Japan **Biological effects of chlorpromazine in chronic schizophrenics. II. With reference to sympathetic neuronal function.** Kyushu Neuro-Psychiatry. 26(1):120-126, 1980.

Biological effects of chlorpromazine in chronic schizophrenics were investigated. Ss were 11 schizophrenics and 8 normal males who were injected with chlorpromazine and 5 normal males injected with physiological saline. The systolic blood pressure of schizophrenics showed significant elevation and paradoxical response as compared with the normal chlorpromazine group. The heartrate and wave height of the plethysmograph of the finger in both groups increased after chlorpromazine injection with no significant difference; the spontaneous galvanic skin response of schizophrenics was not suppressed after chlorpromazine injections. The spontanous galvanic skin response and the cortical level before chlorpromazine injection in schizophrenics had positive correlations with the degree of severity of schizophrenic symptoms. 25 references. (Author abstract modified)

003417 Kuschinsky, K. Abteilung Biochem. Pharmakol., MPI-Exp. Med., Gottingen, West Germany **/On the physiology and pharmacology of endorphins./** Zur Physiologie und Pharmakologie von Endorphinen. Klinische Wochenschrift. 57:701-710, 1979.

The physiology and pharmacology of endorphins were studied in reference to their possible therapeutic values. Endorphins are peptides with an opiate effect which are synthesized in several tissues of the organism, especially in the digestive tract and the central nervous system. Endorphins show a pharmacological spectrum of effects similar to classical opiates, especially in the analgesic area. Among other places, endorphins are located at strategically important spots of the central nervous system, and under certain circumstances they regulate the perception of pain. Possible effects of endorphins on the genesis of schizophrenic psychoses still are being studied. (Journal abstract modified)

003418 Leckman, James F.; Maas, James W.; Heninger, George R. Yale University Child Study Center, 333 Cedar St., New Haven, CT 06510 **Covariance of plasma free 3-methoxy-4-hydroxyphenethyleneglycol and diastolic blood pressure.** European Journal of Pharmacology. 70(2):111-120, 1981.

Plasma levels of the norepinephrine metabolite 3-methoxy-4-hydroxyphenethyleneglycol (MHPG) and blood pressure variables were measured in six fasting normotensive male Ss after clonidine (1 and 5mcg/kg) or placebo in a double-blind study. Plasma MHPG reached a nadir significantly below baseline and placebo level 3 hours after the 5mcg/kg clonidine dose. Mean MHPG concentrations were significantly correlated with diastolic blood pressure, but this relationship was independent of clonidine dose and sampling time. A significant correlation between plasma free MHPG and diastolic blood pressure was also found under drug free conditions. 49 references. (Author abstract modified)

003419 Massarotti, Marino; Allegri, Graziella; Roccella, Paolo; De Antoni, Antonio; Costa, Carlo; Toffano, Gino. Neurosurgical Clinic University, Arcispedale S. Anna, Ferrara, Italy **Levels of 5-hydroxyindoleacetic acid and tryptophan in lumbar cerebrospinal fluid and blood of patients with dementia and normal pressure hydrocephalus after tryptophan administration.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 227-234).

The lumbar cerebrospinal fluid (CSF) concentration of 5-hydroxyindoleacetic acid (5-HIAA) after tryptophan (TRY) loading in patients with normal pressure hydrocephalus (NPH) and in controls was evaluated to determine any difference in conditions in which 5-HIAA production is stimulated. TRY load causes an increase of 5-HIAA levels in CSF mediated by an increase of serotonin biosynthesis in the brain. The lumbar CSF TRY concentrations and total and free TRY levels in serum before and after TRY load were measured in order to correlate metabolite levels with serum and CSF TRY levels. Ss included 10 patients with idiopathic NPH (presenting dementia with idiopathic communicating hydrocephalus) and 14 controls; all Ss had normal CSF pressure and normal composition. An oral dose of L-TRY (50mg/kg) was administered to each S. No difference in levels of total and free TRY in serum and of TRY in CSF were found after the amino acid loading between the idiopathic NPH Ss and the controls. The TRY load in NPH patients produced an increase in 5-HIAA levels in lumbar CSF significantly inferior to those of controls. It is suggested that the slight increase of 5-HIAA in CSF of NPH patients after loading does not depend on the availability of blood free or total TRY nor on interference with its active transport across the blood-brain barrier; instead, the hypothesis of reduced hydroxylation of TRY in idiopathic NPH Ss is supported. The regulation of serotonin biosynthesis in the brain is considered and the results provide evidence of the lowered activity of TRY-hydroxylase in idiopathic NPH. 32 references.

003420 McKeith, Ian G.; Williams, Anne; Nicol, A. R. Winterton Hospital, Sedgefield, Cleveland, England **Clonidine in Tourette syndrome.** Lancet. No. 8214:270-271, 1981.

A double-blind placebo controlled trial using clonidine in a 13-year-old boy with Tourette syndrome is reported. Clonidine (3mg/kg) produced no side-effects and reduced the number of motor and vocal tics. Progressive increases in dose lessened the therapeutic effect. Return to the original dosage was accompanied again by improvement, which had been maintained in a 3 month followup.

003421 Olanow, C. Warren; Finn, Andrew L.; Prussak, Charles. P.O. Box 2905, Duke University Medical Center, Durham, NC 27710 **The effects of salicylate on the pharmacokinetics of phenytoin.** Neurology. 31(3):341-342, 1981.

The effects of salicylate on the pharmacokinetics of phenytoin were investigated in six epileptic patients receiving long-term phenytoin therapy. Acetylsalicylic acid reduced the total serum phenytoin concentration but did not alter the free serum concentration. There was no loss of seizure control or toxicity. Total phenytoin concentrations in such patients may not accurately reflect pharmacologic activity and may be misleading. Aspirin appears to displace phenytoin from protein binding sites, thereby increasing availability for metabolism. It is considered unlikely that common analgesic dosages of aspirin would adversely affect the average phenytoin treated patient. 10 references. (Author abstract modified)

003422 Parkes, J. D.; Schachter, M.; Marsden, C. D.; Smith, B.; Wilson, A. King's College Hospital, London SE5 9RS, England **Lisuride in parkinsonism.** Annals of Neurology. 9(1):48-52, 1981.

Motor and hormonal changes associated with the dopamine receptor agonist, lisuride, were investigatd in nine Ss with idiopathic, postencephalitic, or drug induced parkinsonism. Lisuride is a soluble ergolene derivative with endocrine effects similar to, but more potent than, those of bromocriptine. Lisuride at a dosage of .05 to .15mg intravenously caused an immediate improvement in tremor, rigidity, akinesia, and postural deformity, but also caused chorea and orofacial dyskinesia. Improvement lasted 2 to 3 hr. Lisuride had little or no effect in a single patient with progressive supranuclear palsy. Oral lisuride therapy, .8 to 4.8mg daily, had similar effects but occasionally caused reduced awareness and hallucinations. Hormonal reactions were similar to those found for bromocriptine. 25 references. (Author abstract modified).

003423 Prikryl, P.; Rysanek, K.; Tovarek, J. 3rd Internal Clinic, Medical Faculty, University J. E. Purkyne, Dimitrova 14, 602 00 Brno, Czechoslovakia **Psychosomatic stress and lipoperoxides of human platelet-rich plasma.** Activitas Nervosa Superior. 22(4):300-301, 1980.

The effects of acetylosalicylic acid, indomethacine, and vitamine E on lipoperoxides in platelet rich plasma were investigated in normal human volunteers and in patients suffering psychosomatic stress reaction subsequent to myocardial infarction of ischemic heart disease. Significant differences were found between the lipoperoxide values before and after application of acetylosalicylic acid and vitamin E. No significant differences were found between the healthy Ss and the patients with psychosomatic stress reaction. 6 references.

003424 Puech, Alain J.; Brochet, Denis; Lecrubier, Yves; Simon, Pierre. Dept. de Pharmacologie, Faculte de Medecine Pitie-Salpetriere, 91, boulevard de l'Hopital, F-75634 Paris Cedex 13, France **/Neuroleptics: activation or inhibition of the dopaminergic system?/** Neuroleptiques: activateurs ou inhibiteurs du systeme dopaminergique? Psychologie Medicale. 12(11):2427-2430, 1980.

The effects (activation or inhibition) of neuroleptics on the dopaminergic system are discussed. The therapeutic effect of neuroleptic drugs seems related to the blockade of dopaminergic receptors. However, there are two types of dopaminergic receptors (DA-1 and DA-2) which could have opposite functions. The blockage of DA-1 receptors by drugs such as chlorpromazine inhibits the dopaminergic system, while the blockage of DA-2 receptors by drugs such as pimozide or sulpiride activates this system. Thus, it appears that neuroleptic drugs could have opposite effects on the dopaminergic system. 8 references. (Journal abstract modified)

003425 Rolandi, E.; Magnani, G.; Milesi, G. M.; Barreca, T. Via Montani, 32/4, I-1648 Genova, Italy **Effect of a psychoactive drug, trazodone, on prolactin secretion in man.** Neuropsychobiology. 7(1):17-19, 1981.

Trazodone, an antidepressant drug, was administered in a single oral dose (50 mg) to 10 normal Ss aged 24 through 41 years to determine its effect on prolactin secretion. A significant decrease of serum prolactin (PRL) values occurred. The mean serum PRL levels were 8.9 plus or minus 2.2ng/ml in basal conditions and 4.5 plus or minus 1.7ng/ml 180 min after trazodone. Pretreatment with this psychoactive drug does not modify TRH induced PRL release. 9 references. (Author abstract modified)

003426 Sachar, Edward J. Dept. of Psychiatry, College of Physicians and Surgeons, Columbia University, New York, NY

10032 **Neuroendocrine approaches to psychoneuropharmacologic research.** In: van Praag, H., Handbook of biological psychiatry: part III. New York, Marcel Dekker, 1980. 383 p. (p. 169-177).

The neuroendocrine approaches to neuropharmacological issues are illustrated by a review of some recent studies of the hormonal effects of amphetamines and neuroleptics. Amphetamine studies include: the controversy about the relative effects of dextro-amphetamines and levo-amphetamines on brain noradrenergic and dopaminergic systems; the relative effect of the isomers on dopaminergic activity; and the effect of chronic D-amphetamine therapy in hyperkinetic children. Neuroleptic studies include: the relative prolactin (PRL) responses of normal subjects and schizophrenics to dopamine (DA) blockers and agonists as a way of testing the hypothesis of excessive brain dopaminergic activity in schizophrenics; the question of PRL response to neuroleptics in patients with tardive dyskinesia in whom a neuroleptic induced hypersensitivity of DA receptors has been hypothesized; the correlation between PRL responses and antischizophrenic properties of neuroleptics; drugs which are ineffective in schizophrenia; the question of PRL-stimulating potency in relation to clinical potency; and the neuropharmacological similarities and differences between three brain dopamine systems. 35 references.

003427 Sechter, Daniel; Briley, Mike S.; Raisman, Rita; Langer, Salomon Z.; Zarifian, Edouard. Centre Hospitalier Sainte-Anne, 1, rue Cabanis, F-75674 Paris Cedex 14, France / **3H-Imipramine binding in human platelets: diminution of binding sites in depressed patients.**/ Liaison de l'imipramine tritiee sur les plaquettes humaines: diminution des sites de fixation chez les deprimes. Psychologie Medicale. 12(11):2453-2457, 1980.

High affinity specific 3H-imipramine binding sites found in human platelets were studied. These binding sites were compared in 38 control subjects and 27 depressed patients before antidepressant treatment. Results indicate that the number of platelet binding sites in the depressed patients was significantly lower than in the control group. The affinity constants in the two groups were similar. The use of more subjects, more definite parameters, and postmortem studies on cerebral levels is suggested for future studies. 8 references. (Journal abstract modified)

003428 Seppala, T.; Linnoila, M.; Sondergaard, I.; Elonen, E.; Mattila, M. J. Dept. of Pharmacology, University of Helsinki, Helsinki, Finland **Tyramine pressor test and cardiovascular effects of chlorimipramine and nortriptyline in healthy volunteers.** Biological Psychiatry. 16(1):71-77, 1981.

The cardiovascular effects of chlorimipramine (CI) and nortriptyline (NT) were investigated in 20 healthy volunteer Ss, using a double-blind crossover design. Resting supine diastolic and systolic blood pressure (DBP and SBP) and heartrate were measured and tyramine pressor tests were performed. Main findings include: 1) both CI and NT shifted the dose response relationship for tyramine induced increase in SBP to the right; 2) this effect ocrrelated significantly with plasma desmethyl-CI but not with CI or NT concentrations; 3) CI increased both DBP and SBP at rest; and 4) NT increased heartrate at rest. Results are discussed with reference to previous studies of cardiovascular effects of tricyclic antidepressants and the relation of such effects to gender, age, and diagnosis of patient and the pharmacological profile of the drug. 25 references.

003429 Simpson, John A. University of Glasgow, Institute of Neurological Sciences, Southern General Hospital, Glasgow, Scotland **Baclofen: broader aspects of activity.** Scottish Medical Journal. 25(Baclofen Symposium Issue):S1-S2, 1980.

In an introduction to a symposium on baclofen, held in Glasgow in November, 1979, a brief history of the pharmacological treatment of paresis is presented preliminary to a discussion of baclofen. Recent evidence shows that (minus) baclofen is active, but the (plus)enantiomer is not. Like gamma-aminobutyric acid it inhibits dopaminergic systems and substance P, a polypeptide important in primary afferent transmission. The most important site of action is currently believed to be on the nerve terminals used for presynaptic inhibition. Implications of this action for potentiation of analgesic substances and for behavioral effects are considered.

003430 Small, Joyce G.; Milstein, Victor; Kellams, Jeffrey J.; Small, Iver F. Indiana University School of Medicine, Larue D. Carter Memorial Hospital, 1315 W 10th St., Indianapolis, IN 46202 **Auditory brain stem evoked responses in hospitalized patients undergoing drug treatment or ECT.** Biological Psychiatry. 16(3):287-290, 1981.

Brainstem auditory evoked responses (BSERs) were investigated in 24 psychiatric inpatients undergoing treatment with psychoactive drugs or ECT. Patients included those with diagnoses of schizophrenic disorders, major depressive disorder, bipolar disorder, schizoaffective disorder, and atypical psychosis; all but one ECT patient were receiving treatment with neuroleptics, tricyclic antidepressants, and/or lithium during the study period. Prior to therapeutic interventions, 85% of the BSER studies were interpreted as entirely within normal limits; this percentage remained unchanged during and following ECT and with drug treatment. One patient in each group had significant BSER abnormalities prior to treatment, but these disappeared before the time of the second recording; in three other patients, minor deviations were present which did not change with drug treatment or ECT. The one exception was in a 47-year-old depressed woman, who showed normal pretreatment BSERs, but whose recordings 24 hours after fifth seizure in the ECT showed remarkable deviations. 5 references.

003431 Surwillo, Walter W. University of Louisville, Health Sciences Center, Louisville, KY 40292 **Cortical evoked potentials in Gilles de la Tourette's syndrome -- a single case study.** Psychiatry Research. 4(1):31-38, 1981.

Average cortical evoked potentials (AEPs) to auditory stimulation and ARP recovery functions were investigated in a 13-year-old boy suffering from Gilles de la Tourette's syndrome. Data obtained from the patient while on and off haloperidol were compared with data from a group of normal control subjects matched for age and sex. Latencies of the P2 and N2 components of the AEP were noticeably shorter in the Tourette's syndrome patient than in the control group. Recovery from stimulation, as estimated by the cortical evoked potential to the second of two closely spaced stimuli, was faster in the patient than the controls. After the patient's treatment with haloperidol, the latencies of the P2 and N2 components of the AEP and the speed of recovery from stimulation appeared to be no different in the patient than in the control subjects. Findings suggest that cortical excitability is higher in the Tourette's syndrome patient, whose AEPs also showed evidence of a maturational advance over the normal subjects. 15 references. (Author abstract)

003432 Tyce, Gertrude M.; Sharpless, Nansie S.; Kerr, Frederick W. L.; Muenter, Manfred D. Dept. of Physiology, Mayo Clinic, Rochester, MN 55901 **Dopamine conjugate in cerebrospinal fluid.** Journal of Neurochemistry. 34(1):210-212, 1980.

Conjugated dopamine (DA) was detected in the cerebrospinal fluid (CSF) of two patients with Parkinson's disease during treatment with L-DOPA and an inhibitor of aromatic L-amino acid decarboxylase (L-AAAD). A DA conjugate probably DA sulfate was also detected in the CSF of dogs after administration of L-DOPA alone or in combination with an L-AAAD inhibi-

tor. Conjugated DA in the plasma of dogs was reduced to a greater extent than free DA when an L-AAAD inhibitor was given with L-DOPA. This suggests indirectly that in the absence of enzyme inhibition the formation of DA sulfate conjugates is a rapid, efficient mechanism for the maintenance of low concentrations of free DA in plasma during L-DOPA administration. 18 references.

003433 Vajda, F. J. E.; Donnan, G. A.; Phillips, J.; Bladin, P. F. Dept. of Neurology, Austin Hospital, Heidelberg, Victoria 3084, Australia **Human brain, plasma, and cerebrospinal fluid concentration of sodium valproate after 72 hours of therapy.** Neurology. 31(4):486-487, 1981.

Sodium valproate concentrations were assayed in brain, plasma, and cerebrospinal fluid (CSF) of nine neurosurgical patients suffering from a variety of brain tumors. Sodium valproate was given for 3 days before surgery. Brain levels were 6.8% to 27.9% of plasma concentrations, and CSF levels were 7.6% to 25.0% of plasma levels. There was a significant correlation between brain and CSF levels and plasma on Spearman ranking. These results confirm that valproate is not selectively concentrated in brain fractions, and the concentration in brain is related to the free anticonvulsant level in plasma. 10 references. (Author abstract modified)

003434 Vidales, Juan Emilio. Hospital Nacional **/Endorphins./** Las endorfinas. Neuropsiquiatria. 10(2):73-82, 1979.

The effects of psychopharmaceuticals on endorphins are examined. Opium was one of the first substances used by man to mitigate a psychomotor excitation crisis. Opium is now utilized in experiments which attempt to discover the genesis of illnesses which affect the mind. The different endorphins (beta, gamma, alpha, mu, and delta) and their characteristics are presented. The endorphins are responsible for opiate behavior, analgesia, and violence. The discovery of endogenous substances with similar effects to opium creates new possibilities for investigation of cerebral neurotransmission. 12 references. (Journal abstract modified)

003435 Virtanen, Raimo. Dept. of Pharmacology, Institute of Biomedicine, University of Turku, Kiinamyllynkatu 10, SF-20520 Turku 52, Finland **Excretion of nortriptyline into saliva.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 19(2):78-81, 1981.

The relationship between serum and saliva concentrations of nortriptyline was studied in seven healthy volunteers given a single oral dose (50mg). The stimulation of saliva flow with Parafilm caused a significant increase in the mean saliva pH from 6.93 to 7.34. Simultaneously, the mean saliva/serum concentration ratio decreased from 0.28 to 0.14. This decrease correlated significantly with increases in flow rate and pH. As a result of the great variability in the saliva/serum ratios at any given pH, serum cocentrations could not be reliably calculated from saliva concentrations. 16 references. (Author abstract modified)

003436 Weir, Roger L.; Fan, Kuang J. Dept. of Neurology, Howard University College of Medicine, 2041 Georgia Avenue, NW, Washington, DC 20060 **Spinocerebellar degeneration with parkinsonian features: a clinical and pathological report.** Annals of Neurology. 9(1):87-89, 1981.

A clinical and pathological report is presented of a case of spinocerebellar degeneration with parkinsonian features in a 20-year-old Black female. Parkinsonian tremor improved with L-dopa treatment. Postmortem examination revealed posterior column atrophy in the spinal cord and severe degeneration in the substantia nigra. Atrophic changes were noted in deep cerebellar nuclei and superior cerebellar peduncles. This study confirms the relationships between clinical parkinsonism, substantia nigra degeneration, and the therapeutic effect of L-dopa. 8 references. (Author abstract modified)

003437 Zahn, Theodore P.; Rapoport, Judith L.; Thompson, Christine L. Bldg. 31, Rm. 4C39, NIMH, 9000 Rockville Pike, Bethesda, MD **Autonomic effects of dextroamphetamine in normal men: implications for hyperactivity and schizophrenia.** Psychiatry Research. 4(1):39-47, 1981.

The effects on autonomic nervous system (ANS) activity of two doses (0.25mg/kg and 0.50 mg/kg) of dextroamphetamine were tested in normal men. Skin conductance and heartrate were recorded during rest, tone presentation, and a reaction time task. Compared to placebo, dextroamphetamine increased both skin conductance and heartrate indices of arousal, slowed habituation, and reduced ANS responsivity selectively to more important versus less important stimuli. The last result differs from previous findings on hyperactive and normal boys. The pattern of ANS effects closely resembles findings on drug free schizophrenics, which suggests that it may be a marker for biological changes occurring in amphetamine psychosis and spontaneous psychotic episodes. 32 references. (Author abstract)

14 MECHANISM OF ACTION: BEHAVIORAL

003438 Akimov, G. A.; Medvedev, V. I.; Bakharev, V. D.; Zagryadskiy, P. V.; Stepovik, N. V.; Kaurov, O. A. Kafedra nervnykh bolezney, Voyenno-meditsinskaya akademiya im. S. M. Kirova, Leningrad, USSR **/Experience in using the hormones of the hypophysis posterior lobe in memory disturbances of varying geneses./** Opyt primeneniya gormonov zadney doli gipofiza pri narusheniyakh pamyati razlichnogo geneza. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(12):1787-1790, 1980.

Experience with the use of the hormones of the hypophysis posterior lobe in different types of memory disturbances was studied. Vasopressin and pituitrine were used in 20 patients (8 men and 12 women, 30 to 60 years old) with memory disturbances due to: circulatory disturbances of the vertebrobasilar system, atherosclerosis, neurasthenia, brain concussion, and epilepsy. A control group of 15 patients with memory disturbances due to cerebral atherosclerosis, neurasthenia, and epilepsy was used. The therapeutic efficacy of the hormones was evaluated by psychophysiological methods. Changes in the patients' neurological condition and subjective state were taken into account. Results show the therapeutic efficacy of the hormones in the treatment of amnesic syndromes and sleep disorders. These results indicate that there are no dangerous side-effects but that the treatment should not be used in pregnancy. 6 references. (Journal abstract modified)

003439 Bonnet, M. H.; Webb, W. B.; Barnard, G. no address **Effect of flurazepam, pentobarbital, and caffeine on arousal threshold.** Sleep. 1:271-279, 1979.

After laboratory and procedure adaptation, six normal Ss were administered randomly 30mg flurazepam (twice), 100mg pentobarbital (twice), 400mg caffeine (once), and placebo (twice) on nonconsecutive nights. On each night, Ss were aroused from standard segments of stage 2 sleep five to eight times with an ascending series of 1,000 Hz tones produced by an audiometer. Arousal threshold and awake threshold after each arousal were measured. Both thresholds were increased by flurazepam and pentobarbital and decreased by caffeine. All of the drugs appeared to modify arousal threshold in a time course fashion such that extreme effects were found during the first half of the night. However, the modifications of waking threshold by caffeine and flurazepam continued throughout the sleep period. The method may be a means of measuring the behavior-

al time course of drug activity during the sleep period. (Journal abstract)

003440 Caille, Jean-Emile. Centre d'Etude et de Recherche de Psychologie Appliquee, F-83800 Toulon, France **/Correlated study of the effects of SE-5023 in an hypoxic atmosphere on quantified EEG, vigilance, memory, and mood./** Etude correlee des effets du SE 5023 en atmosphere hypoxique sur l'EEG quantifie, la vigilance, la memoire et la thymie. Psychologie Medicale. 12(7):1589-1599, 1980.

The effects of the drug SE-5023 on EEG, vigilance, memory, and mood were studied. A sample of 12 subjects (6 in an anxiety state) was administered three separate treatments: 30mg of SE-5023 (almitrine plus raubasine), 10mg of almitrine, and 20mg of raubasine. Subjects were tested in an hypoxic atmosphere (15000 feet altitude). During these treatments, the subjects were tested for the effects on EEG, vigilance, memory, and mood. Results show that SE-5023 has an antihypoxic effect. SE-5023 returned the EEGs to normal, reduced acute psychomotor disturbances, improved memory, and reestablished good mood (decreased depression and anxiety). No harmful side-effects were noted. 5 references. (Journal abstract modified)

003441 Fourcade, Jacques; Bugat, Raymond; Favaro, Marc; Martin, Jean-Paul; Robert, Olivier; Thivel-Chamcham, Helene. Centre de Recherches due Service de Sante des Armees, 108, boulevard Pinel, F-69272 Lyon Cedex 1, France **/Comparison of the effects of four benzodiazepines on frame of mind and behavior in healthy subjects./** Comparaison des effets de quatre benzodiazepines sur l'etat et le comportement de l'homme sain. Psychologie Medicale. 12(10):2265-2277, 1980.

The influence of four different benzodiazepines on frame of mind and behavior in healthy subjects was studied. Clobazam, dipotassium clorazepate, diazepam, and lorazepam were administered to 40 healthy male and female subjects who were divided into two groups according to their level of axiety. Experimental conditions consisted of a visual and psychometric task performed for 4 hours over a period of 3 days, simulating a computer terminal professional activity. Results indicate that the drugs influenced the subjects to a certain degree, particularly in judgment, memorization, fatigue, and linguistics. 11 references. (Journal abstract modified)

003442 Gillman, M. A.; Lichtigfeld, F. J. 1032 Medical City, 106 Eloff St., Johannesburg, South Africa **A comparison of the effects of morphine sulphate and nitrous oxide analgesia on chronic pain states in man.** Journal of the Neurological Sciences. 49(1):41-45, 1981.

The effects of nitrous oxide and morphine sulphate on chronic pain states in man are compared. The similarity of effect indicates that nitrous oxide acts on the morphine receptor. In all cases where analgesia was produced, naloxone reversal occurred. These results provide additional evidence for a dual system hypothesis of pain perception and that nitrous oxide analgesia is mediated by the endogenous opiate system. In light of these findings, the possibility of using nitrous oxide to replace morphine sulphate as a screening test for deep brain stimulation analgesia is discussed. 8 references. (Author abstract)

003443 Gruzelier, John H.; Hammond, Nick V. Dept. of Psychiatry, Charing Cross Hospital, Fulham Palace Road, London W6 8RF, England **Lateralized deficits and drug influences on the dichotic listening of schizophrenic patients.** Biological Psychiatry. 15(5):759-779, 1980.

Recall of dichotically presented digit strings was compared between normal Ss and 18 chronic schizophrenic patients tested over 12 weeks on chlorpromazine, placebo, and chlorpromazine reinstatement. Patients were subgrouped according to arousal (as indexed by orienting responses in a tone habituation sequence) and paranoid diagnosis. Digits were of equal intensity or differed by 20 dB between the ears and were reported in any order or one ear before the other. Overall, patients performed as well as control Ss, and withdrawal or reinstatement of drug did not reduce accuracy. Patient/control differences occurred when the louder digits were to be reported second and left hemisphere inhibitory mechanisms were involved, especially when patients were on chlorpromazine. Some lateralized differences in serial position effects found only in patients were interpreted as reflecting left hemisphere processing impairments. The more aroused patients showed poorer accuracy than the less aroused group due to reduced recall in the left ear. Paranoid patients had superior recall and showed less shifting of attenion away from the right ear than nonparanoids. Results are discussed in the context of neurophysiological theories of brain disturbance in schizophrenia. 60 references. (Author abstract)

003444 Iorio, G.; Infante, S.; Gritti, P.; Zizolfi, S.; Celani, T. I Facolta di Medicina e Chirurgia, Universita di Napoli, Napoli, Italy **/Flunitrazepam in the treatment of insomnia: a study of 50 psychiatric patients./** Il flunitrazepam (Roipnol) nella terapia dell'insonnia: studio su di un campione di 50 pazienti psichiatrici. Rivista Sperimentale di Freniatria. 103(2):412-425, 1979.

Insomnia, usually treated with hypnosis or minor tranquilizers, was studied using flunitrazepam. The sample of 50 patients, 21 men and 29 women (average age of 40) were classified on the basis of the diagnostic criteria of the World Health Organization (ICD-8) test. The sample consisted of 28 psychotics, 21 neurotics, and 1 patient with personality disturbances. Flunitrazepam was administered in doses of 2mg per day for a duration of 7 days. The evaluation of the hypnotic effect of the drug was considered through four variables: the time taken to fall asleep, sleep duration, depth of sleep, and the psychophysiological conditions upon waking. The data were evaluated statistically. The results indicate that the specific effect was good in 60%, average in 30%, and poor in 10% of the cases. 13 references. (Journal abstract modified)

003445 Johanson, C. E.; Uhlenhuth, E. H. Dept. of Psychiatry, University of Chicago Pritzker School of Medicine, 950 E. 59th St., Chicago, IL 60637 **Drug preference and mood in humans: repeated assessment of d-amphetamine.** Pharmacology Biochemistry and Behavior. 14(2):159-163, 1981.

Ten normal human volunteers participated in three identical choice experiments comparing preference for 5mg d-amphetamine and placebo. Each experiment consisted of nine sessions. During the first four sessions of each experiment, Ss received alternatively drug or placebo. During the next five sessions, they were given a choice between amphetamine and placebo. Subjective effects were assessed using the Profile of Mood States (POMS) before the drug was taken and 1, 3, and 6 hours later. Ss chose amphetamine an average of 4.0, 3.2, and 2.1 times out of 5 during each of the three experiments, in that order. Compared to placebo, amphetamine produced changes in mood as measured by the POMS, including increased vigor, elation, arousal, and positive mood. Mood changes produced by amphetamine were similar across all three experiments despite the decrease in drug preference, suggesting the independence of these two measures. Results are discussed in terms of developing methods for predicting the abuse potential of psychotropic drugs. 24 references. (Author abstract)

003446 Johnson, L. C.; Church, M. W.; Seales, D. M.; Rossiter, V. S. no address **Auditory arousal thresholds of good sleepers and**

poor sleepers with and without flurazepam. Sleep. 1:259-270, 1979.

Auditory arousal thresholds of 12 good and 12 poor sleepers (sleep onset insomniacs) were obtained during stage 2, stage 4, and REM sleep at various times of the night. Despite claims of being light sleepers who are easily awakened by noise, poor sleeper auditory arousal thresholds were the same as those of good sleepers. Flurazepam (30mg) administration increased the thresholds of six poor sleepers, but the increase was significant only during the period of peak effect which occurred 1 to 2 hours after ingestion. Consistent with poor sleeper complaints of trouble falling asleep, the return to sleep (i.e., sleep latency) was significantly longer for poor sleepers than for good sleepers following stimulus arousals during the first stage 2 and stage 4 periods of the night. Sleep latencies for good and poor sleepers did not differ significantly following subsequent arousals. The sleep latency following the first stage 2 stimulus arousal was reduced significantly in poor sleepers during flurazepam induced sleep. (Journal abstract)

003447 Kent, Saul. no address **Can drugs halt memory loss?** Geriatrics. 36(2):34, 36, 39-42, 1981.

The promise of vasopressin therapy in halting memory loss resulting from the aging process is examined. Recent evidence suggests that such therapy may alleviate memory impairment problems among patients suffering accidental brain trauma and major mental disorders, as well as in geriatric patients. Vasopressin is a hormone synthesized in the anterior hypothalamus of the brain and released from the posterior region of the pituitary gland. Research also suggests the role of the cholinergic system in learning and memory and the key function of the neurotransmitter, acetylcholine. The results indicate that a choline supplemented diet may help preserve memory, and future research should concentrate on the interaction between vasopressin and cholinergic mechanisms and the benefits of memory boosting therapies on life span. 20 references.

003448 Levy, Deborah L.; Lipton, Richard B.; Holzman, Philip S. Illinois State Psychiatric Institute, Chicago, IL **Smooth pursuit eye movements: effects of alcohol and chloral hydrate.** Journal of Psychiatric Research. 16(1):1-11, 1981.

Smooth pursuit eye movements (SPEM) were recorded in human volunteers prior to and after the administration of alcohol and chloral hydrate and quantified using a frequency analysis score previously employed in studies of schizophrenia. Single doses of 2.0 and 3.0ml/kg of alcohol and 1500mg of chloral hydrate resulted in SPEM disruption. Lower doses of these drugs failed to produce a significant measurable effect. The failure of doses of chlorpromazine in a previous study to disrupt SPEM considered together with the obvious disruption of SPEM by two CNS depressant drugs adds evidence that impaired SPEM in schizophrenics is not an artifact of neuroleptic treatment. A number reading task, known to normalize smooth pursuit impairments in schizophrenics, also significantly improved drug induced disruption. These findings weaken the interpretation that number reading improves pursuit only in the presence of poor motivation or inattentiveness. The sites of action of alcohol and chloral hydrate are discussed. 29 references. (Author abstract)

003449 Mello, Nancy K.; Mendelson, Jack H.; Kuehnle, John C.; Sellers, Margaret S. Alcohol and Drug Abuse Research Center, McLean Hospital, 115 Mill St., Belmont, MA 02178 **Operant analysis of human heroin self-administration and the effects of naltrexone.** Journal of Pharmacology and Experimental Therapeutics. 216(1):45-54, 1981.

The effects of maintenance on a narcotic antagonist, naltrexone, or placebo on patterns of operant acquisition and use of heroin were studied under double-blind conditions. Twelve male heroin addict volunteers lived on a clinical research ward for 34 days. After a 9 day drug free period, naltrexone or placebo were given and heroin was available for 10 days. Ss could earn money or heroin by responding on a second order schedule of reinforcement for approximately 90 min. Results demonstrate the feasibility of using direct measures of drug self-administration behavior to evaluate new pharmacotherapies for heroin abuse and indicate the effectiveness of naltrexone in suppressing heroin self-administration. 45 references. (Author abstract modified)

003450 Nakazawa, Yoichi; Hasuzawa, Hiroaki; Kotorii, Tatayu; Ohkawa, Toshihiko; Sakurada, Hiroshi; Nonaka, Kensaku; Dainoson, Keijiro. Dept. of Neuropsychiatry, School of Medicine, Kurume University, Kurume, Japan **Study on the effects of L-5HTP on the stages of sleep in man as evaluated by using sleep deprivation.** Folia Psychiatrica et Neurologica Japonica. 34(2):83-87, 1980.

The effects of L-5-hydroxytryptophan (L-5HTP, 200mg) on the EEG sleep pattern were investigated in normal Ss. When L-5HTP, 200mg, was orally administered, only percent S1 significantly decreased in comparison with baseline. There was no change in any sleep stage on the first recovery night. On the second recovery night, percent S1 significantly decreased, while percent REM sleep (SR) increased significantly. Slow-wave sleep (SWS) did not show any change. The effects of L-5HTP 200mg were investigated on the first recovery night following one night of sleep deprivation. SWS significantly increased on the first recovery night when a placebo was given, while this rebound increase of SWS disappeared and percent S2 significantly increased on the first recovery night when L-5HTP was given. Percent SR significantly increased on the next night after the L-5HTP night. 13 references. (Author abstract)

003451 Paty, Jacques; Brun, Alain; Brenot, Philippe; Gross, Christian; Claverie, Bernard; Gioux, Maxime; Deliac, Philippe. Hopital Pellegrin-Tripode, 2, place Amelie Raba Leon, F-33076 Bordeaux Cedex, France **/Capacities of attention, stress resistance, and slow cerebral potentials: effects of carpipramine on contingent negative variation waves and P-300./** Capacites d'attention, resistance au stress et potentiels lents cerebraux: effects de la carpipramine sur les ondes V.C.N. et P-300. Psychologie Medicale. 12(11):2373-2387, 1980.

The effects of carpipramine on attention, stress resistance, and slow event potentials were studied. Twelve voluntary, normal subjects were administered 150mg/day of carpipramine in a double-blind manner and were monitored to determine behavior, electrophysiology (P-300 and contingent negative variation event related potentials), and psychometric parameters and position. Results indicate that with typical therapeutic doses of carpipramine there was no effect upon awareness or attention, but contingent negative variation event related potentials were increased and situational effects were reduced. The main effect of the drug was found to be destruction of conditioning. Carpipramine effects vary according to an individual's reaction to stress. 35 references. (Journal abstract modified)

003452 Primrose, D. A. The Royal Scottish National Hospital, Larbert, Stirlingshire, Scotland **Self injury in subnormal patients.** Scottish Medical Journal. 25(Baclofen Symposium Issue):S44-S49, 1980.

A 21 month trial of the use of baclofen (lioresal) in mentally defective patients who exhibit self-injurious or other undesirable behavior is reported. The first observed effect was in the mood of the patients, who mostly became calmer and happier. Subsequently many showed a diminution in their undesirable behavior

but hyperkinesis was not helped. A few patients maintained the improvement after stopping the drug, but in most it had to be continued, sometimes with an increase in dosage. Side-effects are discussed. 4 references. (Author abstract)

003453 Sanchez-Turet, M. Depto. de Psicologia Fisiologica, Universidad de Barcelona, Barcelona, Spain /**Effects of psychopharmaceuticals on driving capacity.**/ Efectos de los psicofarmacos sobre la capacidad de conduccion de automoviles. Revista de Psicologia General y Aplicada. 35(3):457-465, 1980.

The effects of psychoactive drugs on the capacity to drive automobiles are discussed. Certain drugs and the majority of psychoactive drugs affect the arousal level to the extent that driving skills are impeded. Given the amount of driving which almost every adult does, a review of literature on the subject is called for. The drugs which have been studied in the past include: heroin, LSD, marihuana, amphetamines, antidepressants, lithium salts, barbiturates, hypnotics, neuroleptics, and minor tranquilizers. Analysis of the research affirms that the majority of psychoactive drugs have a negative influence on the capacity and skillfulness needed to drive, causing a subsequent accident risk. 31 references. (Journal abstract modified)

003454 Smith, Christine M.; Swash, Michael. Dept. of Pharmacology and Therapeutics, London Hospital Medical College, London, England **Effects of cholinergic drugs on memory in Alzheimer's disease.** In: Amaducci, L., Aging of the brain and dementia, vol. 13. New York, Raven, 1980. 326 p. (p. 295-304).

The effects of cholinergic drugs on memory function in Alzheimer's disease were investigated, along with the biochemical features of the disease and the role of postsynaptic receptors, the selectivity of neurotransmitter defect, and the relationship of neurotransmitter defect to symptoms. Findings from use of physostigmine with four Alzheimer's patients indicated that the memory defect is usually associated with changes in motivation and mood that affect the patient's response. To properly test the hypothesis that cholinergic drugs improve memory, it is necessary to take into account variations in severity and involvement of modality specific memory. Findings to date suggest the usefulness of boosting acetylcholine activity via the use of anticholinesterase drugs. 38 references.

003455 Spinweber, Cheryl L. Naval Health Research, Bldg. 36-4, Naval Regional Medical Center, San Diego, CA 92134 **Daytime effects of L-tryptophan.** Psychopharmacology Bulletin. 17(1):81-82, 1981.

To evaluate daytime hypnotic effectiveness of L-tryptophan, the effects of L-tryptophan on sleep latency, nap sleep stages, plasma tryptophan levels, and waking EEGs were assessed in 20 volunteer Ss. Results indicate that L-tryptophan (at a 4g dose) is an effective hypnotic when administered at times other than normal bedtimes. In both morning and evening administration, L-tryptophan significantly reduced time to sleep onset without producing changes in sleep stages. In addition, subjective sleepiness was significantly increased by a 4g dose administered at noontime in combination with a standard laboratory meal or during the early evening hours when administered alone. 13 references. (Author abstract modified)

003456 Staak, M.; Raff, G.; Nusser, W. Institute of Forensic Medicine, Nagelestr. 5, D-7400 Tubingen, West Germany **Pharmacopsychological investigations concerning the combined effects of dipotassium clorazepate and ethanol.** International Journal of Clinical Pharmacology and Biopharmacy. 17(5):205-212, 1979.

Reaction times were studied in 14 male Ss given a 20mg oral dose of dipotassium chlorazepate (DPC), with or without ethanol (1g/kg). After evening administration of DPC, optic reaction times were slightly increased and endurance and concentration were decreased. All types of performance tested were significantly impaired after DPC and ethanol, and this impairment was greater than that seen after ethanol alone. Performance levels had returned to near normal when Ss were retested the next morning. 29 references. (Author abstract modified)

003457 Starobinets, M. Kh.; Volkova, L. D. no address /**The neurophysiological and clinical aspects of pain.**/ Bol': neyrofiziologicheskiy i klinicheskiy aspekty. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(4):607-618, 1980.

The neurophysiological and clinical aspects of pain are discussed under the following headings: the peripheral mechanisms, the central mechanisms, the psychophysiology, the pathophysiology of pain in certain neurological syndromes, the treatment of pain syndrome, and methods of treatment which do not involve the use of drugs (hypnosis, acupuncture, etc.). The effect of certain substances, including serotonin, on the sensitivity of tissue to various stimuli is discussed, as is the capability of opiate like peptides to act as analgesics, and to evoke aggressive behavior. Attempts to introduce some objectivity into the measurement of pain, which is sometimes hampered by the subjective nature of much evaluation of pain, are also discussed. 146 references. (Journal abstract modified)

003458 Tell, Guy; Bohlen, Peter; Schechter, Paul J.; Koch-Weser, Jan; Agid, Yves; Bonnet, A. M.; Coquillat, Gilles; Chazot, Guy; Fischer, Catherine. Schechter: Centre de Recherche Merrell International, 16 rue d'Ankara, F-67084 Strasbourg Cedex, France **Treatment of Huntington disease with gamma-acetylenic GABA, an irreversible inhibitor of GABA-transaminase: increased CSF GABA and homocarnosine without clinical amelioration.** Neurology. 31(2):207-211, 1981.

Gamma-acetylenic GABA (GAG), a potent irreversible inhibitor of GABA-transaminase, was given orally in various dosage schedules to 14 patients with Huntington disease, and the biochemical effects of the drug on cerebrospinal fluid (CSF) concentrations of GABA and the GABA containing dipeptide, homocarnosine, were measured in 10 of 14 patients. Treatment with GAG increased CSF concentrations of GABA and homocarnosine as compared to pretreatment values, suggesting that the drug increased brain GABA concentration. Despite this neurochemical effect, the clinical state was not improved. Except for single seizure episodes in five patients, GAG therapy was well tolerated. These results do not exclude the possibility that agents that augment CNS GABAergic function may prove useful in therapy of Huntington disease. 27 references. (Author abstract modified)

003459 Walker, Mary K. University of Illinois, Medical Center, 845 South Damen Avenue, Chicago, IL 60612 **Effects of dextroamphetamine sulfate on repeated acquisition behavior and mood in humans: a preliminary report.** Psychological Record. 31(1):29-41, 1981.

The effects of nontoxic doses of orally administered dextroamphetamine sulfate on the learning behavior maintained by the repeated acquisition task in 4 healthy adult males were assessed. Subjects received either anhydrous dextrose placebo or 5, 10, or 15mg dextroamphetamine sulfate. Two hours after drug administration, subjects completed two repeated acquisition sequences and two self-report scales. Learning of the behavioral chains of the repeated acquisition task, using light position as a discriminative stimulus, was characterized by a decrease in errors and an increase in response rate which was maximal at a dose of 10mg drug. Subjective measures of drug effect on four mood clusters of the Profile of Mood States and

five subscales of the Addiction Research Center Inventory demonstrate primarily a dose related function. 19 references. (Author abstract modified)

003460 Williams, Harold L; Rundell, Orvis, H., Jr.; Smith, Landgrave T. Dept. of Psychiatry, Oklahoma Center for Alcohol and Drug Related Studies, University of Oklahoma, P.O. Box 26901, Oklahoma City, OK 73190 **Dose effects of secobarbital in a Sternberg memory scanning task.** Psychopharmacology. 72(2):161-165, 1981.

Mean reaction times of 45 Ss obtained in a Sternberg memory scanning task were examined for the effects of secobarbital at two doses that span the range commonly used in clinical practice (1.47mg/kg and 2.94mg/kg). Both doses slowed reaction times significantly, with a more pronounced effect at the higher dose. The discriminability of the probe stimulus interacted with the barbiturate, producing a hyperadditive effect on reaction time, but only at the high dose. The data are interpreted as additional support for a hypothesis localizing the effects of secobarbital to stimulus encoding stages in the reaction process. 12 references. (Author abstract modified)

15 TOXICOLOGY AND SIDE EFFECTS

003461 Ananth, J. McGill University, Montreal, Quebec, Canada **Clinical aspects of dyskinesia.** Indian Journal of Psychiatry. 22(3):239-246, 1980.

Clinical aspects of tardive dyskinesia (TD), including predisposing factors, prevalence, precipitating factors, and reversibility are described and discussed. It is suggested that TD is not as prevalent as reported studies have indicated since these studies merely reflect the cumulative number of TD cases among the residual population of mental hospitals. Clinical and legal implications of treating a patient with neuroleptics which can produce TD are considered since the symptoms, however rare, are severe, incapacitating, iatrogenic, and treatment resistant. It is argued that such neuroleptics should be administered and that acute schizophrenic patients should not have the possible side-effects of their medication explained. 65 references.

003462 Bakris, George L.; Smith, Donald W.; Tiwari, Subash. 1026 East Wayne St., South Bend, IN 46617 **Dermatologic manifestations of lithium: a review.** International Journal of Psychiatry in Medicine. 10(4):327-331, 1980-81.

The major dermatological and immunological complications associated with lithium carbonate ingestion are summarized. This drug has demonstrated proven efficacy in the treatment of bipolar affective disorder. Lithium carbonate has been reported to cause folliculitis, pruritic dermatitis, acneiform eruptions, and psoriasis. The increased neutrophilic migration in the dermis induced by lithium may cause an increased cell division exacerbating preexisting psoriasis or inducing it in normal populations. An increased incidence of antinuclear antibodies has been found in psychiatric patients as opposed to controls, the greatest incidence being in those taking lithium. It is concluded that other than exacerbation of psoriasis and severe progressive acneiform eruptions unresponsive to treatment, dermatological manifestations are benign and do not warrant discontinuance of lithium carbonate. 26 references. (Author abstract modified)

003463 Bakris, George L.; Taylor, Michael A.; Mulopulos, George P.; Wawczk, Sandra. 1026 E. Wayne St., South Bend, IN 46617 **Lithium prophylaxis and the kidney.** Journal of Affective Disorders. 3(1):37-42, 1981.

The records of 44 patients under age 55 with bipolar affective disorders, who were without known systemic illness and who were receiving lithium prophylactically for a minimum of 6 months, were reviewed to determine the incidence of kidney related symptoms. Polyuria was the earliest and most frequent side-effect. Patients receiving other psychotropic medication in addition to lithium showed a significant increase in the prevalence of polyuria, particularly after 3 months of exposure to medication. The onset of polyuria was correlated with duration of lithium treatment and age at initiation of therapy. The data suggest that polypharmacy, duration of exposure to lithium and age each predict the development of delayed polyuria, a symptom consistent with interstitial nephritis. 36 references. (Author abstract modified)

003464 Barros-Pinto, Maria Coeli de. Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil **/Tardive dyskinesia./** A discinesia tardia. Jornal Brasileiro de Psiquiatria. 29(5):299-305, 1980.

The problems of tardive dyskinesia are examined. Tardive dyskinesia is internationally recognized as a severe side-effect of neuroleptic treatment. Despite all the knowledge about neuronal function and regulatory mechanisms, the hypothesis about hypersensibility of the post synaptic dopaminergic receptor does not allow for satisfactory therapeutic strategies. Due to these problems, the importance of prophylactic measures is emphasized. Some suggestions to relieve tardive dyskinesia include: suspension of medication, antidopaminergic treatment, cholinomimetic treatment, and GABA antagonist treatment. 7 references. (Journal abstract modified)

003465 Berger, Philip A.; Davis, Kenneth L. Stanford Psychiatric Clinical Research Center, V. A. Medical Center, Palo Alto, CA 94304 **Pharmacological studies of tardive dyskinesia: implications for future research.** In: Baxter, C., Perspectives in schizophrenia research. New York, Raven Press, 1980. 445 p. (p. 333-351).

Pharmacological studies of the drug treatment side-effect tardive dyskinesia are reviewed, and the many reasons a carefully designed, multicenter prospective study is needed to address the question of tardive dyskinesia are detailed. Areas covered include: epidemiology of tardive dyskinesia; differential diagnosis; neuropharmacology of tardive dyskinesia; pharmacological studies in humans with tardive dyskinesia; unanswered questions concerning tardive dyskinesia. The discussion that followed the presentation of the paper at a symposium for strategies for future research in schizophrenia is given. 87 references.

003466 Bersani, Giuseppe; Eliseo, Claudio; Nocera, Fabio; Dotti, Andrea; Hadjichristos, Christos; Tomasetti, Flavio; Galeazzi, Giancarlo. Istituto di Clinica Psichiatrica, Universita di Roma, Roma, Italy **/Tardive dyskinesia: clinico-epidemiological revision and contribution./** Discinesia tardiva: revisione e contributo clinico-epidemiologico. Revista di Psichiatria. 14(6):482-495, 1979.

The clinical features of tardive dyskinesia, as an extrapyramidal hyperkinetic symptomatology, resulting from chronic neuroleptic treatment, were studied. A sample of 170 subjects (86 men and 84 women) from a psychiatric hospital who had been receiving neuroleptic treatment for an extended period was categorized. Results indicate that 30.3% of the subjects demonstrated tardive dyskinesia. The majority presented slight dyskinesia, were over 60 years old, and had neuroleptic treatment for over 20 years. Some clinical ideas on prevention are proposed. 23 references. (Journal abstract modified)

003467 Bittencourt, P. R. M.; Richens, A. Clinical Pharmacology Unit, Institute of Neurology, Queen Square, London, WC1N 3BG, England **Anticonvulsant-induced status epilepticus in Lennox-Gastaut syndrome.** Epilepsia. 22(1):129-134, 1981.

A case report of a 22-year-old woman with the Lennox-Gastaut syndrome who developed serial apneic/tonic with concomitant bursts of repetitive spikes at 16 to 20/sec, after receiving therapeutic doses of chlormethiazole, clonazepam, and diazepam for the treatment of serial tonic/clonic generalized seizures is presented. A direct relationship was found between dose of chlormethiazole and frequency of apneic/tonic seizures. Since these tonic seizures have been noted during natural sleep and after sleep induced by various sedative drugs in patients with slow spike wave in the EEG, it is likely that the reduction in level of consciousness induced by sedative drugs is the causative factor. 19 references. (Author abstract modified)

003468 Bodensteiner, John B.; Morris, Harold H.; Golden, Gerald S. Dept. of Neurology, Oklahoma Children's Memorial Hospital, University of Oklahoma, Oklahoma City, OK 73126 **Asterixis associated with sodium valproate.** Neurology. 31(2):194-195, 1981.

Two case reports of patients with asterixis who were taking valproic acid and had serum levels within the therapeutic range are presented. Asterixis is characterized by intermittent brief relaxation of tonically contracting muscles involved in the maintenance of posture. Neither patient had clinical or laboratory evidence of hepatotoxicity. Only one other patient has been reported with valproate associated asterixis in the absence of toxic serum drug levels of hepatotoxicity. Asterixis seems to be due to a central effect of the drug unrelated to hepatotoxicity or sedation. 15 references. (Author abstract modified)

003469 Branchey, Marc H.; Branchey, Laure B.; Richardson, Mary A. Rockland Research Institute, Orangeburg, NY **Effects of gradual decrease and discontinuation of neuroleptics on clinical condition and tardive dyskinesia.** Psychopharmacology Bulletin. 17(1):118-120, 1981.

The effects of a procedure for determining the lowest effective dose of neuroleptic medication, which involves gradual decrease and/or discontinuation of neuroleptics, on clinical condition and taradive dyskinesia were investigated in a group of 32 hospitalized chronic schizophrenic patients. Prior to the study period, neuroleptics were replaced in all patients by equivalent doses of loxapine hydrochloride, administerd in liquid form. In the experimental group, medication was decreased in successive steps of 5 weeks duration to one half, one fourth, and finally, one eight of its initial value. This was followed by the administration of a placebo medication for 6 months. Results indicate that 76% (n=16) of the experimental group relapsed; all but one of these deteriorated 2 to 14 weeks after medication was discontinued. The data support the effectiveness of low maintenance neuroleptic doses. Differential relapse rates by age, sex, and drug history are noted. 4 references. (Author abstract modified)

003470 Brasil, Marco Antonio Alves. Servico de Psiquiatria, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil **/Advantages and disadvantages of prolonged use of neuroleptics./** Vantagens e desvantagens do uso prolongado de neurolepticos. Jornal Brasileiro de Psiquiatria. 29(2):91-98, 1980.

The validity of prolonged use of neuroleptics for schizophrenics is discussed. Results of tests show that unwanted side-effects due to the prolonged administration of neuroleptics are not adequately known and therefore cannot be properly controlled. Patients taking neuroleptics should be monitored carefully, keeping these two aspects in mind. Withdrawal of the drug for short periods and the careful assessment of irreversible unwanted side-effects such as tardive dyskinesia should be routine practices. 19 references. (Journal abstract modified)

003471 Cancro, Robert; Davis, John M.; Klawans, Harold; Tancredi, Laurence. New York University Medical Center, 566 First Avenue, New York, NY 10016 **Medical and legal implications of side effects from neuroleptic drugs. A round-table discussion.** Journal of Clinical Psychology. 42(2):78-82, 1981.

In a round table discussion, the side-effects that may occur during the treatment of schizophrenia with neuroleptic drugs are fully examined. Included are autonomic, extrapyramidal, other CNS, endocrine, and metabolic, allergic, and skin and eye side-effects. The differences between the various side-effect profiles of various antipsychotic drugs are noted. The restrictions imposed by laws designed to protect the patient's rights are evaluated with regard to the side-effects of neuroleptic drugs. The meaning of informed consent is delineated. (Author abstract modified)

003472 Casey, Daniel E.; Korsgaard, Soren; Gerlach, Jes; Jorgensen, Aage; Simmelsgaard, Hans. Dept. of Psychiatry, V.A. Medical Center, 3710 SW US Veterans Hospital Road, Portland, OR 97201 **Effect of des-tyrosine-gamma-endorphin in tardive dyskinesia.** Archives of General Psychiatry. 38(2):158-160, 1981.

The effect of the nonopiate like beta-lipoprotein 62-77 fragment, des-tyrosine-gamma-endorphin (DTgammaE) in tardive dyskinesia was investigated in 10 chronic psychotic inpatients with neuroleptic induced tardive dyskinesia and parkinsonism who received DTgammaE and placebo. Drug effects on movement disorders and eye blinking rates were assessed by blind evaluations of randomly sequenced videotapes made during standardized examinations before and 30, 60, and 120 minutes after each injection and 24 hours postinjection of days on consecutive treatment. Changes in schizophrenic symptoms were evaluated openly with the schizophrenic subscale of the Comprehensive Psychiatric Rating Scale. There were no significant effects of DTgammaE on any parameter and no side-effects. This suggests that DTgammaE within the tested dose range does not influence the pathophysiology of neurolelptic induced dyskinesias or chronic schizophrenia and does not have neuroleptic properties. However, DTgammaE is well tolerated and should be tested with higher doses during prolonged treatment. 39 references. (Author abstract modified)

003473 Colt, Edward W. D.; Kimbrell, Diane; Fieve, Ronald R. Fieve: New York Psychiatric Institute, 722 West 168th Street, New York, NY 10032 **Renal impairment, hypercalcemia, and lithium therapy.** American Journal of Psychiatry. 138(1):106-108, 1981.

In view of recent reports of renal impairment and hypercalcemia associated with lithium treatment, concentrations of serum creatinine and serum calcium were determined in 97 manic-depressive patients treated at a lithium therapy clinic. Of these, two men had elevated serum creatinine and normal serum calcium levels, five women and one man had elevated serum calcium and normal serum creatinine levels, and one woman had both elevated serum creatinine and calcium levels. There was a trend for patients with elevated serum levels to be somewhat older than their counterparts with normal levels. Findings indicate that long-term lithium therapy was associated with only mild renal impairment and hypercalcemia and are consonant with previous findings. However, the mean duration of lithium treatment in these patients was only 44 months, it is possible that the prevalence of these disorders may increase with increased duration of therapy. 10 references.

003474 Crews, Eugene L.; Daw, Jane. University of Alabama in Birmingham School of Medicine, University Station, Birmingham, AL 35294 **Neuroleptic-induced syndrome mimicking myasthenia gravis.** Psychosomatics. 22(1):67-68, 1981.

A case study is reported of a 51-year-old schizophrenic woman who demosntrated symptoms of myasthenia gravis. Her symptoms included difficulty in swallowing, muscular weakness, and depression. Her prompt response to antiparkinsonism medication reversing her previous deteriorating course, implicated her neuroleptic medication as the cause of the syndrome. 8 references.

003475 Danielczyk, W. Neurologische Abteilung, Pflegeheim, Wien-Lainz, Austria **/Acute pharmacotoxic psychoses in chronic cerebral conditions./** Akute pharmakotoxische Psychosen bei chronischen zerebralen Erkrankungen. Wiener Medizinische Wochenschrift. 129 Suppl. 55: 1-15, 1979.

The psychopathological symptoms of acute pharmacotoxic psychoses in chronic cerebral disturbances are discussed, and an overview of their pathogenesis is given. The frequency of the occurrence of these psychoses in brain atrophy and degenerative brain disorders is noted. Patients with Alzheimer's disease and senile dementia, Huntington's chorea, multiple sclerosis, cerebrovascular disorders, and Parkinson's disease were studied, and the influence of various medications on the genesis of exogenous psychoses is discussed. Particularities in the treatment of Parkinson's disease are discussed in reference to pharmacotoxic psychoses. (Journal abstract modified)

003476 Davidson, Arnold B. Dept. of Pharmacology, Research Division, Hoffmann-LaRoche, Inc., Nutley, NJ **Animal models of tardive dyskinesia.** Psychopharmacology Bulletin. 17(1):45-47, 1981.

The development and utility of animal models of tardive dyskinesia are reviewed. Three types of animal models are described: homologous, analogous, and empirical correlational models. It is noted that the relationship between chronic treatment with dopamine receptor blockers and tardive dyskinesia has been studied by many investigators and has led to the development of two major types of animal models which may have utility in studying tardive dyskinesias. The supersensitivity model is partly homologous and partly analogous; the chronic cebus monkey model appears to be homologous to tardive dyskinesia in all respects. However, this latter model cannot be utilized extensively because of the time and expense involved. 13 references. (Author abstract modified)

003477 Davis, Kenneth L; Faull, Kym F.; Hollister, Leo E.; Barchas, Jack D.; Berger, Philip A. Psychiatry Service, V.A. Medical Center, 130 West Kingsbridge Road, Bronx, NY 10468 **Alterations in cerebrospinal fluid dopamine metabolites following physostigmine infusion.** Psychopharmacology. 72(2):155-160, 1981.

The effect of intravenous physostigmine administration on the cerebrospinal fluid (CSF) levels of homovanillic acid (HVA) and dihydroxyphenylacetic acid (DOPAC) in normal Ss was determined. After an adjustment for differing CSF concentrations of probenecid, physostigmine was found to elevate CSF HVA and DOPAC concentrations. Results are discussed in relation to the ability of physostigmine to decrease the symptoms of some patients with tardive dyskinesia. The possibility that physostigmine may act indirectly to inhibit nigrostriatal dopaminergic impulse flow is mentioned. 71 references. (Author abstract modified)

003478 de la Fuente-Ramirez, Ramon. Instituto de la Nutricion, Mexico, D.F., Mexico **/Lithium carbonate and the kidney./** El carbonato de litio y el rinon. Salud Mental. 3(3):26-28, 1980.

The controversy surrounding the effects of lithium carbonate on the kidney is discussed. Some articles have suggested that lithium carbonate may be the cause of renal structural damage in some patients. The kidneys are the basic route for the excretion of this drug, but only about 20% is excreted. The doctor must make sure that patients taking lithium are on a low sodium diet or are taking diuretics. One common effect of lithium treatment is a diabetes syndrome. Although renal damage has been seen, it is possible that depressed patients taking this medication have a predisposition for renal problems. Doctors prescribing lithium carbonate should inform the patients of the danger, use a low concentration, and examine patients prior to taking the medication for adequacy of renal functions. A urine analysis should be done every 6 months. 16 references.

003479 Devane, C. Lindsay; Wolin, Richard E.; Rovere, Raphael A.; Panahon, Norma C.; Sutfin, Tamara A.; Jusko, William J. Jusko: Clinical Pharmacokinetics Lab., Millard Fillmore Hospital, 3 Gates Circle, Buffalo, NY 14209 **Excessive plasma concentrations of tricyclic antidepressants resulting from usual doses: a report of six cases.** Journal of Clinical Psychiatry. 42(4):143-147, 1981.

Six patients are described who achieved very high plasma concentrations of imipramine and desipramine during chronic therapy with usual doses. Side-effects were minimal. Speculation as to apparent tolerance includes the presence of low metabolite concentrations. It is concluded that plasma concentrations monitoring may be indicated to identify the occasional patient who achieves potentially toxic plasma concentrations while taking recommended doses of tricyclics. 16 references. (Author abstract)

003480 Dietz, Albert J., Jr. Dept. of Internal Medicine, University of North Dakota School of Medicine, Fargo, ND 58102 **Amphetamine-like reactions to phenylpropanolamine.** Journal of the American Medical Association. 245(6):601-602, 1981.

Cases of seven patients who experienced acute CNS effects following ingestion of phenylpropanolamine hydrochloride are reported. The drug is an amphetamine like substance that is found in 64 different over the counter preparations for colds and appetite suppression. It is also found in numerous prescription drugs. The effects seen in these patients range from stimulation of the medullary respiratory center to tremor, restlessness, increased motor activity, agitation, and hallucinations. Physicians are cautioned to note the possible side-effects from ingesting preparations containing phenylpropanolamine. 7 references. (Author abstract modified)

003481 Donaldson, James O.; Hale, Mahlon S.; Klau, Marc. Dept. of Neurology, University of Connecticut Health Center, Farmington, CT 06032 **A case of reversible pure-word deafness during lithium toxicity.** American Journal of Psychiatry. 138(2):242-243, 1981.

Observations of a pure word deafness in a patient during recovery from lithium induced delirium are reported. Pure word deafness, or the failure to comprehend the meaning of words in spite of perceived sound, is usually caused by bilateral posterior temporal lesions or a single lesion deep in the posterior lobe of the dominant hemisphere. The deficit in this case is attributed to lithium toxicity, and the aphasia was reversible in 2 days. Implications for the clinical use of lithium are mentioned. 10 references.

003482 Dunleavy, Raymond A. 1612 Greystone Place, Charleston, WV 25314 **Neuropsychological correlates of asthma: effect of hypoxia or drugs?** Journal of Consulting and Clinical Psychology. 49(1):137, 1981.

The effects of drugs on the neuropsychological test performance of asthmatic children were examined. No relationship was

found between drug usage and test performance. These results are contrary to the hypothesis postulated by Suess and Chai that neuropsychological deficits in asthmatic children may be a function of certain antiasthama medication. 4 references. (Author abstract modified)

003483 Ezrin-Waters, Cheryl; Seeman, Mary V.; Seeman, Philip. Seeman: Dept. of Psychiatry, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada M5T 1R8 **Tardive dyskinesia in schizophrenic outpatients: prevalence and significant variables.** Journal of Clinical Psychiatry. 42(1):16-22, 1981.

All the patients of an outpatient clinic for schizophrenia were evaluated for the presence and severity of neuroleptic induced tardive dyskinesia. Forty four percent of the patients showed some degree of tardive dyskinesia. The proportion of patients with tardive dyskinesia increased directly with age and with number of years of neuroleptic treatment. Recent dose reduction exacerbated the syndrome. There were no gender differences in the clinic as a whole. Severity of dyskinesia correlated with anticholinergic drug use, with the piperazine/butyrophenone goup of neuroleptics and with the use of depot administered drugs. The depot correlation was highly significant in the under 30 age group. 38 references. (Author abstract)

003484 Friis, Mogens Laue; Broeng-Nielsen, Bodil; Sindrup, Erik Hein; Lund, Mogens; Fogh-Andersen, Poul; Hauge, Mogens. Dept. of Neurology, Frederiksborg Amts Centralsygehus, DK-3400 Hillerod, Denmark **Facial clefts among epileptic patients.** Archives of Neurology. 38(4):227-229, 1981.

The prevalence of facial clefts was determined in an unselected group of 3203 epileptic probands, and their personal data were cross-matched with a complete file of Danish facial cleft patients born between 1934 and 1977. Anticonvulsants have been suspected of teratogenicity, with facial clefts being the malformation most frequently associated with maternal anticonvulsant therapy. Paternal epilepsy has also been suggested as a factor in the genesis of birth defects, including facial clefts. An association between epilepsy per se and facial clefts would be reflected in a higher facial cleft prevalence among epileptics, and it consequently, would result in an increase of such malformations in their children. Eleven (11) epileptic probands had a facial cleft, which is twice the expected number. The increased prevalence of cleft defects among epileptics could partly explain why more of their children have facial clefts. 19 references. (Author abstract modified)

003485 Gardos, George. West-Ros-Park Mental Health Center, I.R.R. Room 323, 591 Morton Street, Boston, MA 02124 **Dystonic reaction during maintenance antipsychotic therapy.** American Journal of Psychiatry. 138(1):114-115, 1981.

Dystonic reaction during maintenance antipsychotic therapy (molindone) is reported in a 25-year-old male chronic schizophrenia outpatient. The S had been treated with a variety of neuroleptics over the 10 year course of his illness. Tardive dyskinesia was noted 2 years previously while the S was receiving 400mg/day thioridazine. Because of the patient's concern about tardive dyskinesia and obesity the thioridazine dose was gradually tapered and eventually discontinued, resulting in psychotic decompensation. Following hospitalization and reinitiation of neuroleptic therapy, the patient rapidly recompensated and was released on 90mg/day molindone. Because of moderately severe choreoathetoid dyskinetic movements, his dose was reduced to 75 and then to 50mg/day. A week later the patient showed a severe neurological reaction, with rigidity of the trunk, difficulty in arm movement, and an upward rolling of the eyes. Symptoms and subjective distress were relieved by administration of 2mg oral benzotropine. Choreiform movements were still evident at 6 week followup, but there was not recurrence of dystonic reactions. 4 references.

003486 Gilhus, Nils Erik; Aarli, Johan A. Dept. of Neurology, 5016 Haukeland Sykehus, Bergen, Norway **Respiratory disease and nasal immunoglobulin concentrations in phenytoin-treated epileptic patients.** Acta Neurologica Scandinavica. 63(1):34-43, 1981.

Symptoms of respiratory tract disease were recorded for half a year in 32 epileptic patients receiving phenytoin, and in 25 control Ss. There were 16 patients with normal IgA concentration in serum and nasal secretion, and 16 with a reduced concentration of IgA either in serum or in nasal secretion, or in both. Both groups of patients had significantly more frequent respiratory symptoms than did the control Ss. There was no difference when the patient group with decreased IgA concentrations was compared to that with normal IgA levels. All four patients with IgA deficiency both in serum and nasal secretion had, however, more frequent symptoms than any of the controls. There was no difference regarding respiratory tract disease in patients taking phenytoin only, compared to those combining phenytoin and other anticonvulsants. IgC and IgM levels in nasal secretion showed no direct relationship to the frequency of respiratory symptoms. 32 references. (Author abstract modified)

003487 Goldberg, Solomon C.; Shenoy, Ram S.; Sadler, Anne; Hamer, Robert; Ross, Beverly. Dept. of Psychiatry, Medical College of Virginia, Richmond, VA **The effects of a drug holiday on relapse and tardive dyskinesia in chronic schizophrenics.** Psychopharmacology Bulletin. 17(1):116-117, 1981.

The effects of a 6 week drug holiday on relapse, symptom status, and tardive dyskinesia in a group of chronically medicated schizophrenic patients were investigated. For 2 years prior to the study the 30 patients had been treated with fluphenazine decanoate, reporting to the clinic every 3 weeks for an injection. Prior to the 2 years on fluphenazine decanoate, they had been treated with a variety of other neuroleptics for varying periods of time (average duration of illness was about 13 years). Results indicte that the 6 week drug holiday is safe in that no patient relapsed; nor was there significant clinical worsening under the holiday treatment. On the contrary, there was a general improvement in global severity of illness over time. The initial low level of tardive dyskinesia among this sample did not change. 2 references. (Author abstract modified)

003488 Gordon, Christopher. Acute Psychiatry Service, Fruit Street, Boston, MA 02144 **Differential diagnosis of cimetidine-induced delirium.** Psychosomatics. 22(3):251-252, 1981.

A case history of a 60-year-old female patient with a differential diagnosis of cimetidine induced delirium is presented. Cimetidine was used for esophagitis. Since cimetidine is used to prevent stress ulcer in critically ill patients, the delirious patient often has several conditions that could cause a confused mental state. Like most confusional states, the syndrome of cimetidine induced delirium is nonspecific, having been reported to cause confusion, agitation, combativeness, unmanageability, hallucinations, stupor, coma, and convulsions, as well as depression and brainstem dysfunction. With this patient, mode of onset, intact memory, nondepressed mood, and normal vital signs differentiated cimetidine induced delirium from similar states. This case illustrates the clinical presentation of this form of confusion and the importance of differentiating it from similar states using ordinary history, physical examination, and laboratory studies. 10 references.

003489 Graze, Kathleen K. 2750 Broadway, Boulder, CO 80302 **Hyperparathyroidism in association with lithium therapy.** Journal of Clinical Psychiatry. 42(1):38-39, 1981.

A patient who was normocalcemic prior to treatment with lithium for manic-depressive psychosis is described, and his progressive hypercalcemia ensuing over the subsequent 6 years of therapy is reported. Elevated parathyroid hormone levels were found and neck exploration revealed a parathyroid adenoma. Unlike the usual case of hyperparathyroidism, the hypercalcemia was associated with a very low urinary excretion of calcium. The literature is reviewed and possible pathogenetic mechanisms are discussed. Serum calcium should be determined before and periodically during lithium therapy. It is concluded that in susceptible individuals, hypercalcemia may occur due to the unmasking or development of parathyroid adenoma. 9 references. (Author abstract)

003490 Haner, H.; Brandenberger, H.; Pasi, A.; Moccetti, T.; Hartmann, H. Gerichtl. Medizinische Institut, Universitat Zurich, Zurich, Switzerland **/Exceptional cases of death caused by tricyclic antidepressant agents./** Aussergewohnliche Todesfalle durch tricyclische Antidepressiva. Zeitschrift fur Rechtsmedizin. 84:255-262, 1980.

The controversy concerning the question of the effectiveness of tricyclic antidepressants is discussed. In view of the highly toxic nature of these drugs the question arises whether or not to replace them with less dangerous substances. The dangers of tricyclic antridepressants were documented during the investigation of 11 tricyclic poisoning cases in and around Zurich. Switzerland alone reported 54 tricyclic related deaths between 1967 and 1976. (Journal abstract modified)

003491 Harms, D. Kinderklinik, Universitat Erlangen-Nurnberg, West Germany **/Psychopharmaceuticals in pediatric practice./** Psychopharmaka in der Praxis des Kinderarztes. Medizinische Welt. 30:801-806, 1979.

The administration, side-effects, and dangers of psychopharmaceutical drugs for children are discussed. Tables listing the various psychotropic drugs and the most commonly used neuroleptic agents are provided. It is emphasized that psychopharmacotherapy should not be undertaken unless a comprehensive organic brain diagnosis has been made. Parents are warned not to have unrealistic expectations concerning the results of psychopharmacological treatment. Hereditory factors, the environment, and sickness all have an interacting effect on the outcome of drug therapy. Undesirable side-effects are reviewed, such as interference with mental functions, neurological disturbances (especially hypotonia and hyperkinesis), and vegetative disturbances. It is crucial to inform parents about possible side-effects resulting from administration of psychopharmaceuticals. (Journal abstract modified)

003492 Henderson, Victor W.; Wooten, G. Frederick. Aphasia/Neurobehavioral Unit, V.A. Hospital, 150 South Huntington Avenue, Boston, MA 02130 **Neuroleptic malignant syndrome: a pathogenetic role for dopamine receptor blockade?** Neurology. 31(2):132-137, 1981.

The neuroleptic malignant syndrome (NMS) of extrapyramidal signs and hyperthermia, an uncommon complication of therapy with the major tranquilizers is discussed. Other manifestations of NMS are pallor, diaphoresis, blood pressure fluctuation, tachycardia, and tachypneic hypoventilation, which may necessitate respirator support. Death often occurs, but full recovery can result with prompt recognition and proper management. In a patient with Parkinson disease and a chronic psychiatric disorder treated with haloperidol, typical features of NMS appeared upon cessation of dopaminergic antiparkinsonian drugs. Manifestations of NMS are attributed to dopamine receptor blockade in the striatum, increasing thermogenesis, and in the hypothalamus, impairing heat dissipation. 82 references. (Author abstract modified)

003493 Hoffman, Brian F. Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario M5T 1R8, Canada **The diagnosis and treatment of neuroleptic-induced parkinsonism.** Hospital & Community Psychiatry. 32(2):110-114, 1981.

Problems concerning the diagnosis and treatment of neuroleptic induced parkinsonism are discussed. Basal ganglia side-effects caused by neuroleptic drugs are frequently ignored, misdiagnosed, or mistreated by the patient or physician. Such side-effects must be anticipated and appropriate management instituted so that patient compliance with the drug regimen is increased and the therapeutic relationship is maintained. Side-effects can be detected in frequent and complete examinations of the head and neck, limbs, and chest and back. The various medications for drug induced parkinsonism are reviewed, with an emphasis on the indications for selection and the effects of each drug. Common errors in the diagnosis and management of the side-effects of neuroleptic drugs are summarized. 28 references. (Author abstract)

003494 Hoffmann, William F.; Ladogana, Loredana. 777 West End Avenue, New York, NY 10025 **Delirium secondary to clonidine therapy.** New York State Journal of Medicine. 81(3):382-383, 1981.

A case of delirium secondary to clonidine treatment in a 34-year-old Black male is reported. The patient, who had no previous history of psychiatric illness, suffered from vivid frightening dreams, and toxic delirium manifested by vivid hallucinations, delusions, impaired orientation, attentional deficit, and anxiety. There was no evidence that these symptoms were associated with alcohol withdrawal. An increase in the patient's dosage of clonidine 4 days prior to symptom onset, coupled with previous reports of hallucinations and delusions in patients taking clonidine, suggested that clonidine was the offending agent. Reduction of clonidine dose was associated with a gradual improvement in the patient's mental status over the following 4 days. Clonidine was discontinued and propranolol was substituted for control of hypertension. 5 references.

003495 Horrobin, D. F. P.O. Box 10, Nun's Island, Montreal H3E 1JB, Canada **Diazepam as tumour promoter.** Lancet. No. 8214:277-278, 1981.

Studies are briefly reviewed concerning the relationship between diazepam and the existence of tumors. Animal research indicates the possibility that diazepam might promote tumor activity. 8 references.

003496 Jackson, Ian V.; Davis, Leonard G.; Cohen, Ronald K.; Nuttall, Elizabeth A. Melbourne Clinic, 130 Church Street, Richmond, Melbourne, Australia 3121 **Lecithin administration in tardive dyskinesia: clinical and biomedical correlates.** Biological Psychiatry. 16(1):85-90, 1981.

Clinical and biochemical correlates of repeated oral lecithin administration were investigated in one male and five female chronic schizophrenia inpatients with manifest tardive dyskinesia (TD), using a double-blind crossover design. All Ss had been and continued to be maintained on a fixed dose of neuroleptic with no other psychoactive or anticholinergic medication. An increase in serum choline and an amelioration of TD ratings were associated with both 7 and 14 days of lecithin ingestion. Assessment of phosphatidyl choline levels showed no fluctuation over the seven serum samples for any patients; in all pa-

tients, an increase in phosphatidyl ethanolamine was evident in two reagent strips corresponding with lecithin ingestion. Dyskinesia and serum choline reverted to their original levels on ceasing lecithin. 21 references.

003497 Jackson, M. R.; Harris, P. A. Roche Products Limited, Welwyn Garden City, Herts AL7 3AY England **Absence of effect of diazepam on tumours.** Lancet. No. 8211:104, 1981.

The effect of diazepam on tumor growth was studied with rats for a 2 year period. Rats of each sex were used in each of four treatment groups receiving placebo or diazepam (1, 15, and 100 to 225mg/kg) daily by dietary admix. Survival was not adversely affected by diazepam. There was no evidence that diazepam enhanced spontaneous tumor growth in these animals and no indication of decreased latency in tumor induction that would suggest tumor growth promotion. The results do not support the suggestion by Horrobin et al. (1978, 1979, 1980) that diazepam may either cause or promote tumor growth. 4 references.

003498 Jefferson, James W.; Greist, John H. University of Wisconsin Center for Health Sciences, 600 Highland Avenue, Madison, WI 53792 **Some hazards of lithium use.** American Journal of Psychiatry. 138(1):93-94, 1981.

Clinical vignettes are presented that are representative, rather than comprehensive, examples of misadventure which may occur during the course of lithium therapy. These cases illustrate: 1) the importance of correct time sampling for the control of both manic and depressive aspects of bipolar depression; 2) the complications that may be caused by severe polyuria; 3) lithium treatment decision-making in patients with cardiovascular disease; and 4) and the failure to attend to clinical symptoms of lithium neurotoxicity as a result of too heavy reliance on laboratory findings indicative of therapeutic serum levels. The increasingly widespread use of lithium and its therapeutic potential in the treatment of manic-depressive illness have many benefits but, these will not be realized if the drug is used in a way that is haphazard, inattentive, or too rigid. Effort should be made to ensure patients treatment that maximizes the likelihood of response, minimizes side-effects and toxicity, and protects against iatrogenic complications. 8 references. (Author abstract modified)

003499 Jeste, D. V.; Neckers, L. M.; Wagner, R. L.; Wise, C. D.; Staub, R. A.; Rogol, A.; Potkin, S. G.; Bridge, T. P.; Wyatt, R. J. WAW Building, Room 536, Saint Elizabeths Hospital, Washington, DC 20032 **Lymphocyte monoamine oxidase and plasma prolactin and growth hormone in tardive dyskinesia.** Journal of Clinical Psychiatry. 42(2):75-77, 1981.

Lymphocyte monoamine oxidase (MAO) activity and plasma prolactin and growth hormone concentrations were determined blind in 12 elderly, female psychiatric inpatients with tardive dyskinesia and 12 inpatients without tardive dyskinesia, matched for primary diagnosis (schizophrenia or organic brain syndromes) and with a similar duration of neuroleptic treatment. Chronic shcizophrenic patients with tardive dyskinesia had significantly lower lymphocyte MAO activity as compared with clinical controls. Organic brain syndrome patients with tardive dyskinesia did not differ from controls in the lymphocyte MAO activity. These results with MAO parallel earlier findings on platelet MAO. No significant differences were found between tardive dyskinesia groups and controls in the plasma prolactin and growth hormone concentrations. Possible implications of these findings are discussed. 14 references. (Author abstract modified)

003500 Jezierska, Aniela; Sinczuk-Walczak, Halina; Turska-Koeppe, Grazyna. Instytut Medycyny Pracy, ul. Teresy 8, Lodz, Poland /**The clinical dynamics of tetraethyl lead poisoning.**/ Dynamika obrazn klinicznego zatrucia czteroetylkiem olowiu. Psychiatria Polska. 14(2):133-136, 1980.

The clinical picture of tetraethyl lead poisoning was studied in six patients 20 to 46 years old. Their poisoning by tetraethyl lead was accidential, and they were treated in a psychiatric ward, in a toxicological ward, or both. The symptoms appear 12 hours to 12 days after the patients absorbed the toxic substance. Most of the patients were hospitalized only when they showed acute mental disorders. Only in one case did the development of mental disorder stop at the predelirious stage and only in one case did the psychotic picture show characteristics of schizophrenia. The other four patients died. 4 references.

003501 Kane, John; Struve, Frederick; Woerner, Margaret; Weinhold, Paul. Dept. of Psychiatry, Long Island Jewish-Hillside Medical Center, Glen Oaks, NY **Preliminary findings with regard to risk factors in the development of tardive dyskinesia.** Psychopharmacology Bulletin. 17(1):47-49, 1981.

Preliminary findings of a prospective study of risk factors associated with the development of tardive dyskinesia are reported. Of the 500 patients studied, 73% were under 30 years of age and 48% were exposed to neuroleptics for less than 1 year. To date, 20 cases of presumptive tardive dyskinesia have developed. To examine the relationship between cumulative neuroleptic exposure and the development of tardive dyskinesia, the 20 prospective cases were compared to 186 prospectively followed patients with no evidence of tardive dyskinesia. The only significant difference between the groups is mean drug exposure, with the tardive dyskinesia group exposed to neuroleptics for significantly longer than the comparison group. 5 references. (Author abstract modified)

003502 Koller, William C.; Weiner, William J.; Perlik, Stuart; Nausieda, Paul A.; Goetz, Christopher G.; Klawans, Harold L. Klawans: Dept. of Neurological Sciences, Rush-Presbyterian St. Lukes Medical Center, 1725 W. Harrison, Chicago, IL 60612 **Complications of chronic levodopa therapy: long-term efficacy of drug holiday.** Neurology. 31(4):473-476, 1981.

The long-term efficacy of drug holiday for ideopathic parkinsonism patients receiving chronic levodopa therapy was investigated. Chronic use of levodopa may be complicated by dyskinesias, on/off effect, or hallucinosis. Transient levodopa withdrawal (drug holiday) may increase motor responsiveness and decrease levodopa induced side-effects, and the improved state may persist for as long as 9 months. After 1 year, parkinsonian signs approached preholiday levels, and two of the patients required a second drug holiday; side-effects began to reappear 9 to 12 months after the holiday. Four of six patients with psychiatric complications remained free of hallucinations for the entire year. 22 references. (Author abstract modified)

003503 Kopera, H.; Fluch, N.; Harpf, H.; Klein, W. W.; Stulemeijer, S. M. Dept. of Experimental and Clinical Pharmacology, University of Graz, Universitatsplatz 4, A-8010 Graz, Austria **Cardiovascular effects of mianserin -- a comparative study with amitriptyline and a placebo in healthy subjects.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(3):104-109, 1980.

The cardiovascular effects of amitriptyline and mianserin were compared with those of placebo in a double-blind study of 18 healthy volunteers. Drug dosage was increased gradually to a maximum of 150mg for amitriptyline and 60mg for mianserin, and treatment lasted for 8 days. Neither antidepressant altered objective physical condition, intraocular pressure, blood variables, or urinalysis, and drug effects on blood pressure were neg-

lible. The preejection period was prolonged in amitriptyline treated male SS, indicating a negative effect on myocardial contractility. Mianserin reduced the left ventricular and systolic volume, probably by increasing the ejection fraction. It is concluded that therapeutic doses of tricyclic antidepressants such as amitriptyline may produce untoward cardiac effects, whereas mianserin, a tetracyclic antidepressant, may even improve cardiac output. 18 references. (Author abstract modified)

003504 Lazarus, J. H.; John, R.; Bennie, E. H.; Chalmers, R. J.; Crockett, G. Dept. of Medicine, University Hospital of Wales, Cardiff, Wales **Lithium therapy and thyroid function: a long-term study.** Psychological Medicine. 11(1):85-92, 1981.

Clinical and biochemical analyses of thyroid function of patients who had been continuously receiving lithium carbonate for 6 months or more were conducted. Of the 73 patients, goiter was found in 37%, exophthalmos in 23%, positive thyroid autoantibodies in 24%, and abnormal thyrotropin releasing hormone in 49%. It is suggested that thyroid failure due to lithium is usually dependent on antibody mediated damage, and that it is unlikely that lithium has a direct effect on the hypothalamic pituitary axis. 44 references. (Author abstract modified)

003505 Le Bellec, M.; Bismuth, Ch.; Lagier, G.; Dally, S. Clinique Toxicologique, Hopital Fernand-Widal, 200, rue du Faubourg-Saint-Denis, F-75010 Paris, France **/Severe withdrawal syndrome after cessation of benzodiazepine treatment: six clinical cases./** Syndrome de sevrage severe apres arret des benzodiazepines: Therapie. 35(1):113-118, 1980.

Extremely severe withdrawal syndrome as observed in patients after ending treatment with benzodiazepines is discussed. The withdrawal symptoms, particularly convulsions and myoclonies are more prevalent in patients who were under treatment for several months or years. These symptoms appear 3 to 6 days after the treatment ends. One common characteristic is the slow development of the symptoms; insomnia occurs immedidately but the more serious manifestations may not appear for a week. In most cases, the patients were administered low regular doses of oxazepam and lorazepam. It is concluded that the withdrawal of benzodiazepines should take place much more slowly. 4 references. (Journal abstract modified)

003506 Lieberman, Jeffrey. Mount Sinai School of Medicine, One Gustave L. Levy Place, KCC1-South, New York, NY 10029 **Cholinergic rebound in neuroleptic withdrawal syndromes.** Psychosomatics. 22(3):253-254, 1981.

A case history of a 21-year-old man suffering withdrawal symptoms from neuroleptic medication is presented. A variety of symptoms including headache, diarrhea, perspiration, restlessness, nausea, and vomiting can occur following withdrawal. These syndromes are speculated to be partly related to the autonomic activity of the withdrawn antipsychotic drug and/or the concomitantly administered anticholinergic medication. They are exclusive of the range of symptoms cnsidered part of the tardive or persistent dyskinesia syndromes, and of the psychopathologic symptoms that may return upon neuroleptic withdrawal. This patient's symptoms had a gradual onset, rapidly worsened, and then persisted. The usual picture and the autonomic nature of the symptoms with the suspicion of gastrointestinal hyperactivity prompted the trial of benzotropine. It is likely that these withdrawal syndromes are best handled by gradual as opposed to abrupt withdrawal of neuroleptics, giving the body a chance to adjust various physiological mechanisms. 10 references.

003507 Lindenmayer, Jean-Pierre; Vargas, Pilar. 60 Remsen Street, Brooklyn, NY 11201 **Toxic psychosis following use of quinacrine.** Journal of Clinical Psychiatry. 42(4):162-164, 1981.

A case study is reported of a 16-year-old male who developed an acute toxic psychosis after quinacrine treatment. The patient required psychiatric hospitalization. Treatment consisted of supportive therapy with antipsychotic medication given only when extreme agitation was evident. He gradually returned to this former condition. The case is discussed in light of previously published clinical reports and experimental studies. It appears that quinacrine acts as a cortical stimulant, but the exact mechanism of its action on the central nervous system is not clear. 7 references. (Author abstract modified)

003508 Ling, Michael H. M.; Perry, Paul J.; Tsuang, Ming T. Tsuang: Dept. of Psychiatry, College of Medicine, University of Iowa, 500 Newton Road, Iowa City, IA 52242 **Side effects of corticosteroid therapy: psychiatric aspects.** Archives of General Psychiatry. 38(4):471-477, 1981.

Literature is reviewed in order to determine the characteristics of corticosteroid induced mental disturbances. It is concluded that while dosage may be correlated to the risk of developing mental disturbances, neither dosage nor duration of treatment seems to affect the time of onset, duration, severity, or type of mental disturbances. Euphoria, depression, and psychotic reactions are the common manifestations of corticosteroid induced mental disturbances. Females seem to be more prone to these disturbances than males. Patients with past mental illness are not necessarily predisposed to such disturbances. Corticosteroid induced mental disturbances are usually reversible on dose reduction or discontinuation of the drug. At present there are no simple models to explain the psychotic reactions, anxiety, or agitation seen in corticosteroid induced mental disturbances. 81 references. (Author abstract)

003509 Loney, Jan; Whaley-Klahn, Mary Anne; Ponto, Laura Boles; Adney, Kenneth. Dept. of Psychiatry, University of Iowa, Iowa City, IA **Predictors of adolescent height and weight in hyperkinetic boys treated with methylphenidate.** Psychopharmacology Bulletin. 17(1):132-134, 1981.

The effects of methylphenidate treatment of hyperkinetic boys on adolescent height and weight were investigated via examination of archival data concerning 85 Ss treated with methylphenidate. Two separte stepwise multiple regression analyses were performed to predict adolescent height and weight, respectively. Among Ss whose growth was measured an averge of 5 years after they began drug treatment, specific drug related predictors of both adolescent height and weight are: 1) severity of early weight and appetite suppression side-effects; 2) number and length of drug holidays; 3) duration of methylphenidate treatment; and 4) occurrence of nausea or vomiting as an initial side-effect. It is suggested that children who experience side-effects are the ones at-risk for growth suppression, rather than the children who are treated with high dosages of methylphenidate. 7 references. (Author abstract modified)

003510 Lotti, Marcello; Johnson, Martin K. Johnson: MRC Toxicology Unit, Woodmansterne Road, Carshalton, Surrey, England **Neurotoxic esterase in human nervous tissue.** Journal of Neurochemistry. 34(3):747-749, 1980.

The distribution of neurotoxic esterase (NTE) in the human nervous system was mapped, and the sensitivity of NTE and related esterases to organophosphorus esters was examined. NTE was highest in the cortex, particularly in the gray matter. NTE activity in spinal cord was one third that in cortex. Activity in the peripheral nervous system was low but significant. The sensivity of human NTE to Paraoxon and Mipafox was similar to that reported for hen NTE, within a range of threefold. 15 references.

003511 Maltbie, Allan A.; Varia, Indira G.; Thomas, Nunilon U. V.A. Medical Center, 508 Fulton Street, Durham, NC 27705 **Ileus complicating haloperidol therapy.** Psychosomatics. 22(2):158-159, 1981.

A case study is reported of a woman suffering from paranoid schizophrenia who developed ileus from haloperidol therapy. The increases in total daily dosage of haloperidol resulted in increased anticholinergic complications. The discontinued use of haloperidol and additional treatment relieved the symptoms of ileus. It is concluded that the weight and age of a patient should be considered when determining the daily dosage of haloperidol, and a more conservative use of this high potency antipsychotic agent is recommended. 5 references.

003512 Mansheim, Paul. Woods Schools, Langhorne, PA 19047 **Phenytoin toxicity in a brain-damage adolescent: a case report.** Child Psychiatry Quarterly. 14(1):1-4, 1981.

The case of an 11-year-old male patient is presented whose history and clinical course illustrate that phenytoin toxicity in mentally retarded and brain-damaged individuals may present with striking emotional and behavioral symptoms while neurological symptoms may be very subtle. The child had suffered brain-damage as the result of an automobile accident. The prominence of decreased self-care skills as the course of phenytoin toxicity continued was striking. Nystagmus was noticed only when his general condition had improved and his phenytoin level was back in the therapeutic range. These points support the general impression in the literature that symptoms of phenytoin toxicity in the retarded and brain-damaged are likely to be quite different from what is described in other cases, and that loss of self-care skills and emotional symptoms, especially inappropriate euphoria, are often prominent in these populations. 4 references.

003513 Mignee, C.; Garnier, R.; Conso, F.; Efthymiou, M. L.; Fournier, E. Garnier: Centre Anti-Poisons de Paris, Hopital Fernand Widal, 200, rue du Fg St-Denis, F-75010 Paris, France **/Acute overdosage with flunitrazepam./** Intoxication aigue par le flunitrazepam. Therapie. 35(5):581-589, 1980.

Treatment of overdosage of flunitrazepam, a benzodiazepine, is discussed. Symptoms include ataxia and then drowsiness and coma. However, central nervous system depression occurs at much lower doses than with other benzodiazepines. Two peculiar symptoms noted in a few cases are bradycardia and oligopnea. Even in massive overdosage, recovery is usual under supportive therapy. Gastric lavage is the most effective treatment when done shortly after ingestion. Further treatment depends upon the particular signs shown. Hypotension should be treated with colloid. Deep coma and oligopnea necessitate assisted mechanical ventilation. Sinus bradycardia does not require specific treatment. Acceleration of flunitrazepam loss through the kidney by forced diuresis should be avoided because of the low proportion of active metabolites excreted in urine. It is concluded that there are few accidental acute intoxications in children and when they do occur they are much less severe than those in adults. 27 references. (Journal abstract modified)

003514 Mitchell, James E. Box 393 Mayo, University of Minnesota Hospitals, 420 Delaware Street S. E., Minneapolis, MN 55455 **Discontinuation of antipsychotic drug therapy.** Psychosomatics. 22(3):241-247, 1981.

An overview of the possible symptoms of withdrawal that can accompany the discontinuation of antipsychotic drug therapy is presented. Possible symptoms include: psychotic relapse, medical complaints, and dyskinetic movements. Psychotic relapse, if it occurs, may be delayed for months or years and can be detected by close patient followup. Medical symptoms, such as nausea, vomiting, and dizziness, are time limited. Tardive dyskinesia may appear during or after drug withdrawal, but this problem is not necessarily permanent. To minimize symptoms, antipsychotic drugs should be tapered gradually, and patients on an antiparkinsonism medication should continue it for at least a week after the antipsychotic drug is stopped. 30 references. (Author abstract modified)

003515 Muller-Oerlinghausen, B.; Drescher, K. Psychiatrische Klinik der Freien Universitat Berlin, Nussbaum-Allee 36, D-1000 Berlin, 19, West Germany **Time course of clinical-chemical parameters under long-term lithium treatment.** International Journal of Clinical Pharmacology and Biopharmacy. 17(5):228-235, 1979.

No pathological changes in routine clinical and chemical parameters were found in 40 manic-depressive patients treated with lithium for 3 years. Approximately 1000 blood samples were evaluated for hemoglobin, leucocytes, electrolytes in serum, electrophoresis, alkaline phosphatase, and serum creatinine and urea. Patients treated with other psychotropic drugs in addition to lithium were also studied. 13 references. (Author abstract modified)

003516 Nausieda, Paul A.; Koller, William C.; Weiner, William J.; Klawans, Harold L. 1725 W. Harrison, Suite 915, Chicago, IL 60612 **Pemoline-induced chorea.** Neurology. 31(3):356-360, 1981.

A case report is presented in which acute chorea in a child followed ingestion of pemoline mesylate, a central stimulant used to treat children with minimal brain dysfunction. In guinea-pigs, in an experimental model of chorea, chronic administration of pemoline induced behavioral supersensitivity to other dopaminergic agonists. Pemoline is similar to both d-amphetamine and methylphenidate in altering central dopaminergic sensitivity, and may cause chorea by similar mechanisms. Chronic pemoline therapy may offer no significant advantage over therapy with other indirect dopamine agonists. 19 references. (Author abstract modified)

003517 no author. Adverse Drug Reactions Advisory Committee, PO Box 100, Woden, ACT 2606, Australia **Mianserin: a possible cause of neutropenia and agranulocytosis.** Medical Journal of Australia. 2(12):673-674, 1980.

Four episodes of neutropenia or agranulocytosis possibly caused by the tricyclic antidepressant drug, mianserin hydrochloride, were reported to the Australian Adverse Drug Reactions Advisory Committee during the first year of the drug's general availability in Australia. Brief reports of these four patients, two of whom were concurrently receiving phenothiazines, are provided. A small number of reports from other countries support the possibility of this association between hemotological disorders and mianserin. Further surveillance to assess this potentially serious side-effect is needed. 2 references. (Author abstract modified)

003518 no author. no address **Extrapyramidal disorders and borderline syndromes: eredoataxias and dementia.** Pharmacology. 22(1):61-92, 1981.

Abstracts of papers given at the sixth meeting of the Italian League against Parkinson's Disease and Extrapyramidal Disorders, held in Naples in October 1979, are presented. Extrapyramidal and borderline syndromes (eredoataxias and dementia) are discussed, including Friedreich's ataxia and Alzheimer's disease. Biochemical, morphological, electrophysiological, and clinical features of these disorders are described, and various pharmacological approaches to treatment are considered.

003519 no author. no address **Ca-diazepam link? No scientific takers so far.** Medical World News. 22(4):28, 30, 1981.

The controversy surrounding Dr. David F. Horrobin and his claim that diazepam (Valium) may promote cancer is discussed. Dr Horrobin studied the effect of diazepam and other thromboxane A2 inhibitors on the growth of transplanted mammary tumors in rats and found the tumor growth significant. Others argue that there is no data showing a correlation btween the use of Valium and the growth of tumors in humans.

003520 Papadakis, Nikolas; Mark, Vernon H. Harvard Neurosurgical Service, Boston City Hospital, Boston, MA **Intermittent decortication and progressive hyperthermia, hypertension and tachycardia following methylglucamine iothalamate ventriculogram.** Applied Neurophysiology. 43(1-2):59-66, 1980.

A case of intermittent decortication and progressive hyperthermia, hypertension, and tachycardia is reported in connection with the use of methylglucamine iothalamate as an agent for ventriculography in a stereotactic procedure. Although methylglucamine iothalamate issued infrequently since the initiation of computerized tomographic (CT) scanning, other water soluble contrast materials, such as metrizamide, are being used for both myelography and as an adjunct to demonstrate intracranial structures in conjunction with CT scanning. Metrizamide, like methylglucamine iothalamate, can produce seizures, if the concentration in the subarachnoid space is great enough. Although the reaction that occurred in this patient has not been reported with metrizomide, the possibility of a similar reaction exists. 1 reference.

003521 Pariser, Stephen F.; Reynolds, James C.; Falko, James M.; Jones, Bruce A.; Mencer, Deborah L. Jones: Dept. of Psychiatry, Ohio State University Hospitals, 473 West 12th Ave., Columbus, OH 43210 **Arrhythmia induced by a tricyclic antidepressant in a patient with undiagnosed mitral valve prolapse.** American Journal of Psychiatry. 138(4):522-523, 1981.

A case report is presented on mitral valve prolapse syndrome, a common cardiac disorder which occurred following treatment of a 26-year-old depressed woman with the tricyclic antidepressant, desipramine. The patient showed symptoms of ventricular arrhythmia while taking desipramine but had no signs of panic attack. It is suggested that such a syndrome should be considered when young and otherwise healthy patients develop cardiac arrhythmias while taking tricyclic antidepressants. Propranolol can control the symptoms but may lead to an increase in depressive complaints. 8 references.

003522 Peachey, John E.; Brien, John F.; Roach, Carol A.; Loomis, Christopher W. Addiction Research Foundation, 33 Russell St., Toronto, Ontario, Canada M5S 2S1 **A comparative review of the pharmacological and toxicological properties of disulfiram and calcium carbimide.** Journal of Clinical Psychopharmacology. 1(1):21-26, 1981.

The absorption, metabolism, and elimination of disulfiram and calcium carbimide and the mechanisms of reaction with alcohol are described, and implications of these data from clinical practice are discussed. The effects and limitations of the interaction between ethanol and disulfiram and calcium carbimide are discussed. Four areas of concern regarding toxicity are discussed, including medical complications of the reactions with alcohol, toxicity associated with repeated doses of disulfiram or calcium carbimide, possible interactions with other drugs, and acetaldehyde induced hepatotoxicity and cardiotoxicity. 106 references. (Author abstract modified)

003523 Porot, Maurice; Plenat, Michel; Citron, Dominique. C.H.U. de Clermont-Ferrand, Groupe Hospitalier Saint-Jacques, Place Henri-Dunant, F-63003 Clermont-Ferrand Cedex, France **/Hepatic side-effects of antidepressant medications./** Accidents hepatiques des medicaments antidepresseurs. Psychologie Medicale. 12(11):2351-2356, 1980.

Liver disturbances as side-effects of antidepressant medications are discussed. These types of disturbances are rare; they occur in about 1% of cases and are linked most often to monoamine oxidase inhibitors. These drugs are responsible for a cytolitic syndrome, and tricyclics frequently are found to be responsible for a cholestatic syndrome. The pathogenesis of such side-effects still is debated. The following factors are considered to have some involvement in these side-effects: the virus may be reactivated, allergy to the antidepressant drug may develop, and/or an enzymatic induction and a transformation of bodily or drug substances into active metabolites may result from antidepressant drug administration. (Journal abstract modified)

003524 Pringuey, Dominique; Yzombard, Genevieve; Charbit, Jean-Jacques; Portugal, Henri; Saingra, Serge; Fraryssinet, Raymond; Milech, Titus; Dufour, Henri. Service de Psychiatrie, Hopital Sainte-Marguerite, F-13274, Marseille, France **Lithium kinetics during hemodialysis in a patient with lithium poisoning.** American Journal of Psychiatry. 138(2):249-251, 1981.

The lithium concentrations in plasma and erythrocytes of a patient with lithium intoxication were compared while the patient was receiving hemodialysis. The findings yielded data on the pharmacokinetics of lithium ion concentrations during hemodialysis in this type of patient. The elimination curve of lithium showed a fast decrease of plasma levels and erythrocyte concentration. No linear correlation was observed between the plasma levels and the erythrocyteplasma ratio, nor between erythrocyte levels and the ratio, partly because this ratio did not differ greatly with time. The findings also provide an experimental model that confirms the lithium extrusion process from red blood cells. 8 references.

003525 Rappolt, Richard T., Sr.; Gay, George R.; Farris, R. David. Gay: Hilo Medical Group, 1292 Waianuenue Ave., Hilo, HI 96720 **Phencyclidine (PCP) intoxication: diagnosis in stages and algorithms of treatment.** Clinical Toxicology. 16(4):509-529, 1980.

Three stages of phencyclidine intoxication are described in detail. Specific diagnostic and therapeutic procedures are outlined. Two case studies are included. 39 references.

003526 Ratey, John J.; Ciraulo, Domenic A.; Shader, Richard I. Shader: New England Medical Center Hospital, Dept. of Psychiatry, Box 1007, 171 Harrison Avenue, Boston, MA 02111 **Lithium and marijuana.** Journal of Clinical Psychopharmacology. 1(1):32-33, 1981.

A possible interaction between marihuana and lithium that resulted in elevated serum lithium levels is reported. It is hypothesized that the patient's marihuana intake (3 to 4 cigarettes per day) increased the lithium absorption secondary to decreased gut motility. The possible anticholinergic effects of marihuana are described, and the need for physicians to be aware of drug/drug interactions among adolescent patients is emphasized. 18 references.

003527 Reinisch, June Machover. Dept. of Psychology, Rutgers University, Busch Campus, New Brunswick, NJ 08903 **Prenatal exposure to synthetic progestins increases potential for aggression in humans.** Science. 211(4487):1171-1173, 1981.

In an examination of hormone mediated aggression in humans, 17 female and eight male Ss whose mothers were treated with synthetic progestins during pregnancy and their nonexposed sex

matched siblings were administered a measure designed to estimate potential for verbal and physical aggressive behavior. Ss ranged in age from 6 to 18 years old. Ss exposed during gestation showed a significantly higher potential for physically, but not verbally, aggressive behavior than did their nonexposed siblings. Neither age nor birthorder showed any relation to physical aggression scores, but the expected male/female difference between unexposed Ss was found. There were no differences in IQ between exposed and unexposed siblings. Results provide support for the hypothesis that behavior is masculinized by exposure to synthetic progestins during the early stages of development. 42 references. (Author abstract modified)

003528 Rinne, Urpo K. Dept. of Neurology, U iversity of Turku, Turku, Finland **Recent advances in the treatment of Parkinson's disease.** Acta Neurologica Scandinavica. 62(Suppl. 78):103-121, 1980.

A review of research in the pharmacological (levodopa and/or bromocriptine) treatment of Parkinson's disease is presented. Problems associated with chronic levodopa treatment are outlined, including daily fluctuations in performance, end of dose deterioration, dyskinetic disabilities, parkinsonian neurasthenia, and neuropsychological responses (increased frequency of confusion and hallucination and cognitive and emotional dysfunctions). Research in the area of morality (reduced) and responses of brain dopamine receptors to levodopa is summarized. The therapeutic efficacy and side-effects of bromocriptine are compared with those of levodopa, and therapeutic effects and side-effects of combined levodopa bromocriptine treatment are discussed. Preliminary research into the effects of opiate antagonists, synthetic enkephalin analogues, and vasopressin in the treatment of Parkinson's disease is noted. 85 references.

003529 Risch, S. Craig; Groom, Geoffrey P.; Janowsky, David S. Janowsky: Dept. of Psychiatry (M-003), University of California, San Diego, La Jolla, CA 92093 **Interfaces of psychopharmacology and cardiology -- part two.** Journal of Clinical Psychiatry. 42(2):47-59, 1981.

In the second of a series on the interfaces of psychopharmacology and cardiology, the psychopharmacology of the major tranquilizers and the minor tranquilizers, sedatives, and hypnotics is reviewed with respect to their cardiotoxicity, cardiovascular side-effects, and drug/drug interactions. The major tranquilizers examined include the phenothiazines, thioxanthenes, butyrophenones, and reserpine. Among the minor tranquilizers, sedatives, and hypnotics, focus is on barbiturates and related drugs and the benzodiazepins. Management of cardiovascular complications of psychotropic overdose is discussed, as well as potential therapeutic uses of psychopharmacological medications in patients with cardiovascular pathology. 401 references. (Author abstract modified)

003530 Risch, S. Craig; Groom, Geoffrey P.; Janowsky, David S. Janowsky: Dept. of Psychiatry, University of California, San Diego, La Jolla, CA 92093 **Interfaces of psychopharmacology and cardiology -- part one.** Journal of Clinical Psychiatry. 42(1):23-34, 1981.

The pharmacology of the major classes of psychoactive agents is reviewed. These include antidepressants (tricyclic antidepressants and monoamine oxidase inhibitors), lithium carbonate, major tranquilizers (phenothiazines, thioxanthines, butryophenones, reserpine), and minor tranquilizers, sedatives, and hypnotics (benzodiazepines and barbiturates). Their cardiotoxicity, cardiovascular side-effects, and drug/drug interactions are summarized. Management of the cardiovascular complications of psychotropic overdose is discussed as well as potential therapeutic uses of psychopharmacological medications in patients with cardiovascular pathology. 191 references. (Author abstract modified)

003531 Rovinskaya, S. A.; Revva, L. I. Otdeleniye psikhofarmakologii Khar'kovskogo NII nevrologii i psikhiatrii, Kharkov, USSR **/On sensory disturbances occurring during neuroleptic therapy./** O sensornykh narusheniyakh, voznikayushchikh pri neyrolepticheskoy terapii. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):905-909, 1980.

Sensory disorders were studied in 48 female schizophrenic patients undergoing neuroleptic therapy. Both elementary (pain, temperature, tactile, vibrational) and complex (differential two point stimulation, selectivity of perception) forms of contact sensitivity were observed in the patients before, during, and after treatment. It was found that following a 5 to 14 day period of neuroleptic therapy, 34 of the patients showed some form of sensory disorder. The six patients who had exhibited such disorders even before therapy now showed aggravated or modified symptoms. The observed disorders were dynamic and bilateral and involved different brain levels. In patients who were later able to leave the hospital, motor extrapyramidal changes were more frequent than sensory changes. It is concluded that neuroleptic drugs had a direct influence on the sensory sphere, and that the sensory disorders which appeared during the treatment could be designated as a neuroleptical sensory syndrome. 26 references. (Journal abstract modified)

003532 Royzin, L. no address **/Various factors in the pathogenesis of pathological reactions observed in connection with the administration of psychotropic drugs./** Mnogofaktornost' patogeneza patologicheskikh reaktsiy, nablyudayemykh pri vvedenii psikhotropnykh sredstv. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(7):1097-1100, 1980.

Various factors in the pathogenesis of pathological reactions to psychotropic drugs were studied with reference to the case histories of 1,730 patients, anatomical autopsy studies of the CNS of humans, the results of experiments on 4,050 rodents and monkeys, and the results of experiments in vitro on the culture of nerve tissue and certain subcell fragments. The action of tranquilizers, certain stimulants and antidepressants (including lithium), narcotics and hallucinogens was examined neurohistologically, histochemically and with the aid of electron microscopy. Toxic reactions in people who had taken phenothiazine substances were determined in the form of neurological, mental and behavioral disorders, and changes in the internal organs. Also determined were the effects of toxic doses of chlorpromazine on the internal organs of animals. 39 references. (Journal abstract modified)

003533 Sampath, G.; Kumar, Y. Vikram; Narayanan, H. S.; Rao, B. S. Sridhara Rama. National Institute of Mental Health and Neuro Sciences, Bangalore, India **Lithium neurotoxicity at report.** Indian Journal of Psychiatry. 22(3):304-306, 1980.

A case of a young manic patient who developed severe neurotoxicity when on lithium alone is presented. Investigations did not reveal the presence of any infection, electrolyte imbalance, or rise in lithium level. The possibility of lithium producing neurotoxicity at therapeutic levels for as yet unknown reasons is pointed out. It is suggested that this element of risk be considered when starting lithium for therapy or prophylaxis of affective disorders. 7 references. (Author abstract)

003534 Schou, Mogens; Vestergaard, Per. Psychistric Hospital, Risskov, Denmark **Lithium and the kidney scare.** Psychosomatics. 22(2):92, 94, 1981.

The relationship between therapy and morphologic signs of kidney damage is discussed. Research on glomerular function, tubular function, and renal morphology is considered, and it is concluded that none of the results warrant radical changes in the use of lithium where it is indicated. Lithium treatment should continue to be used and should be based on three conditions: 1) careful instructions to patients about treatment principles and risks; 2) cooperation between physician and patient; and 3) systematic monitoring of the treatment with serum lithium determinations.

003535 Seeman, Mary V. Dept. of Psychiatry, University of Toronto, Toronto, Ontario, Canada **Tardive dyskinesia: two-year recovery.** Comprehensive Psychiatry. 22(2):189-192, 1981.

The natural progression of tardive dyskinesia (TD) under conditions of clinically appropriate neuroleptic maintenance was examined over a 2 year period in a sample of schizophrenic outpatients. Ss were individually managed: when possible they were placed on extended drug holidays ranging in duration from 4 weeks to 1 year; when drug free periods were not possible, neuroleptic doses were reduced, and depot fluphenazine was changed to either oral neuroleptics or depot fluphenazine. Of the 41 TD patients initially assessed, 36 were available for followup assessment. In 56% of these patients, TD was either not present or was markedly reduced since the initial assessment; in 14% the TD score was higher at reassessment. There were no differences between males and females in TD recovery, nor were there significant differences between patients on neuroleptic maintenance less than or more than 10 years or between patients on intermittent or steady neuroleptic maintenance. TD recovery was significantly more frequent in patients under 40 years old as compared with those over 40. 14 references.

003536 Shukla, G. D.; Sharma, U. C.; Mehrotra, A. N. M.L.B. Medical College, Jhansi (U.P.), India **Intraocular pressure changes following modified E.C.T.** Indian Journal of Psychiatry. 22(3):274-276, 1980.

Intraocular pressure changes following modified electroconvulsive therapy (ECT) with and without succinylcholine were studied in 60 cases. The pressure was found to rise in both conditions, though the rise was more marked and longer lasting when succinylcholine was used. Without succinylcholine, tension returned to baseline within 3 minutes, while with succinylcholine the tension remained significantly raised even after that period. It is suggested that one should be cautious in giving ECT to patients with glaucoma particularly to patients under succinylcholine chloride. 13 references. (Author abstract modified)

003537 Smith, James M.; Burke, Mary P.; Moon, Cheung O. Harlem Valley Psychiatric Center, Wingdale, NY **Long-term changes in AIMS ratings and their relation to medication history.** Psychopharmacology Bulletin. 17(1):120-121, 1981.

Long-term changes in tardive dyskinesia and their relation to medication history were examined in a large sample using the Abnormal Involuntary Movement Scale (AIMS). One hundred thirty nine schizophrenic inpatients were examined twice with the AIMS, with a 3 year interval between examinations. The sample consisted of 71 males and 68 females with an average age of 57 years and an average length of current hospitalization of 25 years. Significant increases in total AIMS scores and subscales for lips, jaw, and tongue movements were observed in the second AIMS examination. Changes in AIMS total scores were examined for each of four medication course groups: steady neuroleptic use; increased neuroleptic use; decreased neuroleptic use; and off neuroleptics. Significant increases in AIMS scores were found for both the steady neuroleptic and off neuroleptics groups. 8 references. (Author abstract modified)

003538 Suess, William M.; Chai, Hyman. Psychophysiology Dept., National Jewish Hospital, 1999 Julian Street, Denver, CO 80204 **Neuropsychological correlates of asthma: brain damage or drug effects?** Journal of Consulting and Clinical Psychology. 49(1):135-136, 1981.

The conclusions by Dunleavy and Baade regarding hypoxic induced neuropsychological deficit in asthmatic children are questioned and regarded as premature. Dunleavy and Baade concluded that their results support the notion of hypoxic induced brain abnormalities in asthmatic children, because loss of consciousness and prolonged cyanosis, which may occur during a severe asthma attack. It is concluded that the possibility of similar deficits as a function of certain antiasthma medications must be considered. 23 references. (Author abstract modified)

003539 Summers, William, K.; Kaufman, Kenneth R.; Altman, Frank, Jr.; Fischer, John M. University of Southern California School of Medicine, Los Angeles, CA 90053 **THA -- a review of the literature and its use in treatment of five overdose patients.** Clinical Toxicology. 16(3):269-281, 1980.

The use of 1,2,3,4-tetrahydro-5-amino acridine (THA) to treat five cases of intentional drug overdose is described. THA was effective in four of the five cases and had minimal side-effects and a longer duration of action than physostigmine. Relevant literature is reviewed, with particular attention to tricyclic antidepressant overdose and acute anticholinergic syndrome. 55 references.

003540 Supprian, U. Psychiatrische Universitats-Klinik, Hamburg, West Germany **/Emergencies in manic-depressive psychoses./** Notfalle bei manisch-depressiven Psychosen. Neurologie und Psychiatrie fur die Praxis. 5:76-79, 1979.

In a brief overview, suggestions for verbal emergency treatment of manic or depressive patients are given. Febrile hyperkinesis is discussed, with emphasis on the need for electroconvulsive treatment. The dangers of depressive apathy, with the accompanying refusal to accept food, are enumerated. Potential side-effects resulting from psychopharmacological treatment of these psychoses are discussed. (Journal abstract modified)

003541 Tandberg, Dan. University of New Mexico School of Medicine, 620 Camino de Salud, NE Albuquerque, NM 87131 **How to treat and prevent drug toxicity.** Geriatrics. 36(2):64-65, 69-73, 1981.

Techniques of diagnosing, treating, and avoiding problems of overdosing among elderly patients are discussed. It is contended that drug toxicity emergencies in the aged are frequently a result of age related differences in drug absorption, distribution, and elimination. Intentional overdose is comparatively unusual and occurs mostly among aged patients who suffer from organic brain syndrome, severe affective or psychotic states, or chronic alcoholism. Additional social risk factors include loneliness, bereavement, poor economic situation, loss of meaningful employment, poor personal relations, and serious physical illness. After recovery, psychiatric evaluation and treatment is essential. To prevent occurrences of accidental and intentional overdose, a definite diagnosis is necessary before instituting therapy rather than nonspecific treatment of multiple symptoms. 23 references.

003542 Thysell, H.; Brante, G.; Sjostedt, L.; Lindergard, B.; Lindholm, T.; Franzen, G.; Rorsman, B. Dept. of Nephrology, University Hospital, S-221 85 Lund, Sweden **Glomerular filtra-**

tion rate and calcium metabolism in long-term lithium treatment. Neuropsychobiology. 7(2):105-111, 1981.

Glomerular filtration rate (GFR) and calcium metabolism were determined in 29 consecutive patients on long-term lithium therapy for 2.5 to 12 years and in four patients with lithium induced polyuria. In the consecutive series, the GFR was not significantly reduced and no correlations were found between this parameter and the duration of lithium therapy, average serum lithium, highest serum lithium noted, diuresis, or any of the calcium parameters. It is concluded that a relatively well managed lithium therapy for up to 12.5 years does not seem to influence the GFR, even if renal biopsy of four of the patients revealed interstitial nephritis and data in the literature indicate a progressive interstitial nephritis. Results do not support the proposition that polyuria is an alarming sign of pronounced renal lesion. Calcium metabolism is influenced by lithium therapy but from the clinical point of view no negative effects could be found. It is recommended that serum calcium be checked regularly in patients on long-term lithium therapy. 15 references. (Author abstract modified)

003543 Tyrer, Peter; Rutherford, David; Huggett, Tony. Mapperley Hospital, Porchester Road, Nottingham NG3 6AA, England **Benzodiazepine withdrawal symptoms and propranolol.** Lancet. No. 8219:520-522, 1981.

The effects of propanolol on benzodiazepine withdrawal symptoms were examined in 40 patients seen in general practice and psychiatric outpatient clinics who had taken lorazepam or diazepam alone in regular dosage for a mean period of 3.5 years. Ss had their benzodiazepine replaced by propanolol (60 to 120mg/day) or placebo for 2 weeks under double-blind conditions. Depending on the criteria for the definition of an abstinence syndrome, 27% to 45% of the patients had withdrawal symptoms during the study. Propranolol did not affect the drop-out rate or the incidence of withdrawal symptoms, but did significantly reduce their severity in patients completing the study. The percentage fall in serum levels of desmethyldiazepam in patients who experienced withdrawal symptoms after stopping diazepam was significantly greater than in patients with no withdrawal symptoms. 19 references. (Author abstract modified)

003544 Uchigata, Masanobu; Tanabe, Hitoshi; Hasue, Ikuo; Kurihara, Masanao. Dept. of Neurology, Toranomon Hospital, Toranomon 2-2-2, Minato-ku, Tokyo 105, Japan **Peripheral neuropathy due to lithium intoxication.** Annals of Neurology. 9(4):414, 1981.

A case report of peripheral neuropathy due to lithium intoxication is presented. A 56-year-old man with a history of manicpsychosis who had been under intermittent treatment with lithium carbonate for 4 years developed drowsiness, dysarthria, tremor, and unsteady gait, followed by muscle twitching, increased muscle tone, sweating, and fever to 38 degrees C. Three months later dysarthria, truncal ataxia with mid limb ataxia, vertical nystagmus, mild weakness of the extremities, diminished deep tendon reflexes of the lower extremities, and decreased vibratory sense in the feet remained. The mild weakness, hyporeflexia, mild sensory deficits, and electrophysiological and histological findings in the case all are consistent with peripheral neuropathy. Temporal events incriminate lithium as the likely cause. 3 references.

003545 Uetrecht, Jack P.; Woosley, Raymond L. Woosley: Dept. of Medicine, Vanderbilt University School of Medicine, Nashville, TN 37232 **Acetylator phenotype and lupus erythematosus.** Clinical Pharmacokinetics. 6(2):118-134, 1981.

Evidence for a relationship between acetylator phenotype and drug induced lupus erythematosus and idiopathic systemic lupus erythematosus is reviewed. There are several known therapeutic implications of acetylator phenotype; among them, the association of a higher incidence of procainamide induced and hydralazine induced lupus in slow acetylators. Presumably, this is because acetylation of the aromatic amine or hydrazine functional group leads to a nontoxic product. Several other drugs which have been implicated in drug induced lupus also contain an aromatic amine or hydrazine group. The clinical and laboratory characteristics of drug induced lupus and idiopathic lupus are similar, but the degree to which [illegible] pathophysiological mechanisms are related, if at all, is [illegible]own. There is also evidence reported for an association betwe[illegible] the slow acetylator phenotype and idiopathic lupus. If true, this relationship could provoke some new experimental approaches to investigation into the mechanism of idiopathic lupus. 136 references. (Author abstract modified)

003546 Versiani, Marcio. Av. N.S. Copacabana, 1133, conj. 1303, 22070 Rio de Janeiro, Brazil /**Therapeutics VI -- anxiolytics (benzodiazepines).**/ Terapeutica VI -- ansioliticos benzodiazepinicos. Jornal Brasileiro de Psiquiatria. 29(5):307-312, 1980.

The therapeutic use of benzodiazepines is examined. All drugs in this class produce similar therapeutic and unwanted effects. Differences are seen basically in the half-life of the organism (oxazepam and lorazepam -- 8 hours; diazepam and chlordiazapoxide -- 24 hours). These drugs are most effective in neurotic, free floating anxiety which begins abruptly in a previously well adapted personality. The main side-effect is sedation; the drugs may be administered on a single, daily dosage schedule. Physical dependence is rare, but it may be suspected if unusual symptoms develop after suspension of the drug. 5 references. (Journal abstract modified)

003547 Vestergaard, Per; Thomsen, Klaus. Psychopharmacology Research Unit, Aarhus University Institute of Psychiatry, Psychiatric Hospital, DK-8240 Risskov, Denmark **Renal side effects of lithium: the importance of the serum lithium level.** Psychopharmacology. 72(2):203-204, 1981.

The importance of serum lithium levels as an indicator of renal side-effects of lithium was investigated in 19 lithium treated patients. It is noted that patients given long-term treatment with lithium often develop an impairment of renal water reabsorption which may lead to clinically significant adverse reactions. A convenient measure of this impairment may be obtained using the ratio of urine volume (V) divided by lithium clearance (CLi). When data from a large group of patients (n = 218) were recalculated, this ratio showed a significant correlation with the serum lithium level. This finding supports the suggestion that patients might be maintained advantageously at lower serum levels than those commonly employed. 5 references. (Author abstract modified)

003548 Weinhold, Paul; Wegner, James T.; Kane, John M. Kane: Dept. of Psychiatry, Long Island Jewish-Hillside Medical Center, P.O. Box 38, Glen Oaks, NY 11004 **Familial occurrence of tardive dyskinesia.** Journal of Clinical Psychiatry. 42(4):165-166, 1981.

Two case studies are reported of two brothers who had presumptive tardive dyskinesia. Both brothers exhibited abnormal involuntary movement with similar mental illness and treatment histories. This suggests the importance of examining neuroleptically treated relatives of an affected individual for dyskinesia, and indicates the possibility of a genetic factor in vulnerability. 8 references. (Author abstract modified)

003549 Whitelaw, A. G. L.; Cummings, A. J.; McFadyen, I. R. Division of Perinatal Medicine, Northwick Park Hospital and

Clinical Research Centre, Harrow, Middlesex HA1 3UJ, England **Effect of maternal lorazepam on the neonate.** British Medical Journal. No. 6270:1106-1108, 1981.

The effect of maternal lorazepam on 53 neonates was examined for 5 days after delivery. In general, maternal plasma concentrations of lorazepam were higher than the corresponding cord plasma concentrations. Full-term neonates whose mothers had received oral lorazepam had no complications apart from a slight delay in establishing feeding, which in seven out of 29 cases was associated with relatively large doses of lorazepam. Intravenous administration of lorazepam for severe hypertension was associated with significantly low Apgar scores, need for ventilation, hypothermia, and poor suckling. Preterm babies whose mothers had been given lorazepam by either route had a high incidence of low Apgar scores, need for ventilation, hypothermia, and poor suckling. These babies had lower Apgar scores than those whose mothers had received diazepam, but the babies in the diazepam group were heavier and more mature. Lorazepam was an effective sedative and anxiolytic by either route, and there were no eclamptic fits among the lorazepam treated patients. The effects of lorazepam on neonates indicate that its intravenous use at any stage in pregnancy and oral use before 37 weeks should be restricted to hospitals with facilities for neonatal intensive care. 5 references. (Author abstract modified)

003550 Wieck, H. H. Universitats-Nervenklinik, Poliklinik, Erlangen, West Germany **/Changes in and current progress of neurology and psychiatry./** Wandel und aktuelle Fortschritte der Neurologie und Psychiatrie. Medizinische Welt. 30:334-341, 1979.

Changes occurring within the social structure and the nosological context with which psychiatrists are confronted are discussed. Progress in the areas of specific psychiatric diagnosis and therapy is described. Computer tomography is seen as a special diagnostic tool used to measure different degrees of functional psychoses with psychometric tests. The administration and side-effects of psychopharmaceutical drugs and other medications are analyzed for their potential neurological and psychiatric consequences. (Journal abstract modified)

003551 Witschy, James K.; Redmond, Franklin C. Redmond: Dept. of Psychiatry, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Dr., San Antonio, TX 78284 **Extrapyramidal reaction of fluphenazine potentiated by thyrotoxicosis.** American Journal of Psychiatry. 138(2):246-247, 1981.

Evidence of extrapyramidal reaction to fluphenazine potentiated by thyrotoxicosis in a 45-year-old patient mentally retarded schizophrenic is presented. The results are consistent with previous reports of such reactions in thyrotoxic patients treated with haloperidol, and the effects are probably due to interaction between the thyrotoxic state and neuroleptics in general. Implications for clinical use of antipsychotic medications to control behavior before a full organic evaluation can be completed are suggested. 4 references.

003552 Woogen, S.; Graham, J.; Angrist, B. Graham: Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **A tardive dyskinesia-like syndrome after amitriptyline treatment.** Journal of Clinical Psychopharmacology. 1(1):34-36, 1981.

A case report is presented of a 57-year-old woman who suffered orobuccolingual dyskinesia with associated dyskinetic movements of the hands which emerged rapidly during amitriptyline administration and which did not remit over 3 months of observations. This patient, who had only minimal prior exposure to neuroleptics, abruptly developed a syndrome clinically indistinguishable from tardive dyskinesia after only 4 days of treatment with amitryptyline at a dose of only 75mg/day. The dyskinetic movements did not remit over 3 months of observation after amitriptyline was discontinued. 11 references.

003553 Zarranz, J. J.; Caso, C.; Blanco, J. Seccion de Neurologia, Ciudad Sanitaria Sotomayor," Bilbao, Spain **/A trial treatment with tiapride for some extrapyramidal syndromes caused by neuroleptic agents./** Ensayo de tratamiento con tiapride de algunos sindromes extrapiramidales por neurolepticos. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(6):503-508, 1980.

Treatment with tiapride for patients with a combination of symptoms including Parkinson's disease, postural tremor, and orolingual dyskinesia caused by prolonged treatment with neuroleptics was studied. The 10 patients had chronic schizophrenia or paranoia, and a median hospitalization time of 21 years. All had received neuroleptic treatment for from 5 to 10 years, had a median age of 64, were in good health, and had a stable mental condition. Tiapride was administered in a dosage of 300mg per day. Results show a good tolerance for the medication, no side-effects, and some sleep improvement. There was no significant reduction in tremors, but there was no worsening of parkinsonism in most of the cases. 16 references. (Journal abstract modified)

16 METHODS DEVELOPMENT

003554 Aniline, Orm; Allen, Robert E.; Pitts, Ferris N., Jr.; Yago, Lane S.; Pitts, Andrew F. Dept. of Psychiatry, University of Southern California School of Medicine, Los Angeles, CA **The urban epidemic of phencyclidine use: laboratory evidence from a public psychiatric hospital inpatient service.** Biological Psychiatry. 15(5):813-817, 1980.

Results of a program for the routine assessment of phencyclidine (PCP) in blood of all newly admitted psychiatric patients in Los Angeles, California, are described. The procedure produced evidence that PCP exposure is frequent in these patients and may account for more psychiatric admissions than any other disorder. The gas chromatograph/nitrogen and gas chromatographic thermionic specific (nitrogen) detector methods are extremely sensitive for the detection of PCP, ketamine, and other arylcycloalkylamines, and trace amounts can be recognized. It is concluded that there is an urban epidemic of PCP abuse, use, and exposure. It is possible that 50 to 80 of the 135 patients studied would not have been admitted to the public psychiatric hospital if it were not for PCP. 13 references.

003555 Babbini, M.; Gaiardi, M.; Bartoletti, M. Institute of Pharmacology, University of Bologna, Italy **Effects of pentazocine and nalorphine on motility in chronically morphine treated rats: a potential substitution test to detect the narcotic character of a drug.** Neuropharmacology. 20(1):49-53, 1981.

Time effects of three doses of pentazocine and nalorphine upon locomotor activity were investigated in rats experimentally naive or treated chronically with 20mg/kg morphine daily. Pentazocine exhibited a motility pattern qualitatively similar to that of morphine. That is, in chronically treated rats acute depressive effects underwent tolerance, while acute excitatory effects became much more pronounced. Nalorphine, on the contrary, in no case exerted significant influence upon motility. These results, together with results obtained in previous work with methadone, meperidine, and methamphetamine, suggest that a locomotor activity substitution test might be a useful way to detect the narcotic character of a drug. 10 references. (Author abstract modified)

003556 Bondy, Brigitta; Remien, Jorg. Pharmakologisches Institut der Universitat Munchen, Nussbaumstrasse 26, D-8 Munchen 2, West Germany **Differential binding of chlorpromazine to human blood cells: application of the hygroscopic desorption method.** Life Sciences. 28(4):441-449, 19881.

Using a modified hygroscopic desorption method (HDM), the binding of chlorpromazine (CPZ) to human blood cells was investigated in the concentration range from 0.01 to 100mcmol/1. For erythrocytes and ghosts, the ratio between cell bound and free drug concentration was constant up to 60mcmol/1 CPZ. Saturable binding, however, was observed for lymphocytes, granulocytes and less pronounced for platelets. In contrast to red cells, CPZ binding to white cells and platelets was strongly dependent on pH. For all blood cells, a sharp decrease in binding occurred at drug concentrations higher than 60mcmol/1. This can hardly represent a true saturation of binding sites, since membrane damaging effects occur at these concentrations. Results suggest that binding of CPZ to erthrocytes represents an interaction at the water membrane interphase. For the different binding pattern of white cells, the cell organelles, the cytoplasma and the different composition of the membranes might be of importance. 17 references. (Author abstract)

003557 Branconnier, Roland J.; DeVitt, Donald; Cole, Jonathan O. Geriatric Psychopharmacology Laboratory, Boston State Hospital, Boston, MA **Evaluation of drug efficacy in dementia: a computerized cognitive assessment system.** Psychopharmacology Bulletin. 17(1):4-6, 1981.

A microcomputer based, cognitive assessment system for use in drug efficacy studies in senile dementia is described. At present, the following discrete cognitive processes test paradigms have been incorporated into the microcomputer system: Sperling's perceptual trace; Buschke's selective reminding task; depth of verbal encoding; digit/symbol recognition; Sterbnerg's item recognition; nonverbal incidental learning; and visual reaction time with variable foreperiod. The patient station consists of a Sanyo 15● computer remote terminal for presentation of visual display, a custom designed alpha numeric keyboard with special circuitry for accurate chronometric measurement of response time, and a Nutone intercom for verbal responses. 12 references. (Author abstract modified)

003558 Cossum, P. A.; Roberts, M. S. School of Pharmacy, University of Tasmania, Hobart, Tasmania, Australia **Availability of isosorbide dinitrate, diazepam and chlormethiazole, from i.v. delivery systems.** European Journal of Clinical Pharmacology. 19(3):181-185, 1981.

The loss of isosorbide dinitrate, diazepam, and chlormethiazole from aqueous solutions stored in plastic infusion bags and/or infused through plastic giving sets was investigated. During simulated infusions, the loss of isosorbide dinitrate was found to be flow rate dependent. The clinical and pharmacokinetic significance of this loss is discussed. Infusion of isosorbide dinitrate from a glass syringe through high density polyethylene tubing overcame the loss associated with its administration via plastic infusion bags and intravenous giving sets. This method was also applied successfully to minimize the previously reported loss of diazepam and chlormethiazole during infusions. 6 references. (Author abstract modified)

003559 Goldberger, Etienne; Cotonat, Jean; Boubli, Serge; Blanc, Michel; Girard, Martine; Escande, Michel; Gayral, Louis. Service de Psychiatrie, C.H.R. Purpan-Casselardit, F-31059 Toulouse Cedex, France **/First results of an original method for measuring blood levels of antidepressants (amitriptyline and nortriptyline)./** Premiers resultats d'une methode originale de dosage des taux seriques d'antidepresseurs (amitriptyline et nortriptyline). Psychologie Medicale. 12(11):2471-2476, 1980.

A new method for measuring plasma levels of amitriptyline and nortriptyline was studied. A daily dose of 100mg/square meters of body surface (average daily dose 160mg) was administered to 21 patients with deep depression. Plasma levels of amitriptyline and its catabolite nortriptyline were measured during the steady-state period (9 to 12 days into treatment). Results indicate that endogenous depression and cyclic depression demonstrate a correlation between improvement and the plasma level of amitriptyline and nortriptyline, and between the improvement and the proportion of amitriptyline/nortriptyline in plasma evaluated by demethylation. 22 references. (Journal abstract modified)

003560 Herberg, L. J.; Wishart, T. B. Institute of [illegible]rology, National Hospital, Queen Square, London, WC1N 3BG, England **Self-stimulation and locomotor changes indicating neuroletpic (thioridazine).** Neuropharmacology. 20(1):55-60, 1981.

The use of a paradigm involving self-stimulation and locomotor changes to assess the anticholinergic potential of a representative noncataleptogenic neuroleptic, thioridazine, in comparison with that of a typical neuroleptic, spiroperidol, is described. Interactions of both compounds with a known anticholinergic agent, hyoscine, were also compared. Results are compatible with in vitro evidence that thioridazine exerts a powerful central anticholinergic action, masked in vivo by a simultaneous blockade of central dopamine receptors; this anticholinergic action would have preempted the action of hyoscine and accounted for the ineffectiveness of hyoscine after thioridazine; while partial reversal of the anticholinergic action, by oxotremorine, would have unmasked the dopamine blocking component of thioridazine and accounted for the accentuated depression of self-stimulation. These results support suggestions that blockade of acetylcholine receptors by thioridazine could contribute to its low liability to extrapyramidal side-effects in clinical use. 40 references. (Author abstract modified)

003561 Hogarty, Gerard E. Western Psychiatric Institute and Clinic, University of Pittsburgh, School of Medicine, Pittsburgh, PA **Natural and therapeutic environmental indicators of maintenance dosage requirements.** Psychopharmacology Bulletin. 17(1):36-37, 1981.

The utility of natural and therapeutic environmental indicators of maintenance dosages appropriate for pharmacological aftercare in schizophrenia is reviewed. The lack of precise data to guide maintenance therapeutic dosages is emphasized, and the need to consider the environmental demands upon the patient in adjusting dosage is examined. It is suggested that in benign environments medication requirements appear less than in stressful psychosocial environments. It is predicted that dosages might eventually be titrated, depending upon measures of personal and environmental vulnerability by concurrent application of human engineering principles. 12 references. (Author abstract modified)

003562 Koup, J. R.; Gibaldi, M. Dept. of Pharmacy Practice, University of Washington, Seattle, WA 98195 **Single point estimation of phenytoin dosing requirement.** Research Communications in Chemical Pathology and Pharmacology. 31(1):3-12, 1981.

Computer simulations showed that a single serum sample obtained 24 hours after a loading dose of phenytoin (18mg/kg i.v.) could predict the maintenance dose of phenytoin required to maintain a steady-state serum concentration of 15mg/L. A strong linear correlation was found between the required phenytoin maintenance dose and the reciprocal of the 24 hour serum

concentration. The single point method of dosage estimation is not likely to be accurate, however, with oral dosage forms or when dosage requirements approach 10mg/kg/day. 12 references. (Author abstract modified)

003563 Le Normand, Y.; Kergueris, M.-F.; Lasserre, M.-P.; Plantard-Neau, C.; Larousse, C. Service de Pharmacologie, UER de Medecine, 1, rue Gaston-Veil, F-44035 Nantes Cedex, France **/Simultaneous administration of five antiepileptic drugs in plasma through gas-liquid chromatography./** Methode de dosage simultane de cinq anti-epileptiques dans le plasma par chromatographie en phase gazeuse. Therapie. 35(2):179-188, 1980.

The use of gas-liquid chromatography to determine plasma levels of antiepileptic drugs is discussed. After the removal of lipids by cyclohexane, the drugs are extracted by acidic dichloromethane, the solution is evaporated to dryness, and on column methylation occurs. The use of a heated nitrogen detector allows a single extraction procedure, avoiding the interference of plasma substances. Fast extraction and chromatography steps make possible more determinations per day. It is concluded that this technique will improve the use of these drugs; in epilepsy the dosage varies greatly and is difficult to determine. 16 references. (Journal abstract modified)

003564 Maziere, M.; Godot, J. M.; Berger, G.; Baron, J. C.; Comar, D.; Cepeda, C.; Menini, Ch.; Naquet, R. Service Hospitalier F. Joliot, Dept. de Biologie, CEA-Saclay, F-91190 Gif-sur-Yvette, France **Positron tomography. A new method for in vivo brain studies of benzodiazepine, in animal and in man.** Advances in Biochemical Psychopharmacology. 6:273-286, 1981.

A new method for in vivo brain studies of benzodiazepines in animals and humans, positron tomography, is described. The positrons and associated annihilation gamma rays emitted by carbon 11 make possible external visualization of intracerebral localization and quantitative measurement by positron emission tomography of the flunitrazepam labelled by carbon 11. With the use of carbon 11 as a tracer and the positron camera as an external detection device, it has been possible to study in a living baboon, with a noninvasive method, the cerebral and extracerebral kinetics of flunitrazepam and its in vivo interactions with other benzodiazepines. 17 references.

003565 Midha, K. K.; Cooper, J. K.; Lapierre, Y. D.; Hubbard, J. W. College of Pharmacy, University of Saskatchewan, Saskatoon, Saskatchewan, Canada **Fluphenazine, trifluoperazine and perphenazine in vacutainers.** Canadian Medical Association Journal. 124(3):263,265, 1981.

The possibility that contact of blood samples with the rubber stopper of the vacutainer tube may affect the measurement of the weakly basic lipophilic antipsychotic drugs, fluphenazine, trifluoperazine, and perphenazine was investigated using recently developed radioimmunoassay procedures for routine clinical monitoring. Duplicate blood samples, one of which was allowed to contact the stopper the other which was not, were collected from nine patients who received one of three drugs by intramuscular injection and from 27 patients who had received one of the three drugs orally. In seven of the nine samples of injected patients, drug concentrations in samples were significantly lower when the blood had touched the stopper. Substantial apparent reductions in plasma drug concentrations (.3% to 100%) were also found in patients receiving the medications orally. The need for clinicians to be aware of this problem is emphasized. 9 references.

003566 Mittel, Neuman S.; Gardner, George H., III; Rose, Betty W. Brockton V. A. Medical Center, Brockton, MA 02401 **Computerized monitoring of psychotropic drug orders: some trends and revelations.** Hospital and Community Psychiatry. 32(4):277-278, 1981.

The Drug Intake Management and Evaluations System, a computerized system to monitor psychotropic drug orders and provide feedback to physicians, was evaluated on three experimental hospital wards over a 10 month period. Drug orders were also monitored on two control wards where no feedback was provided. No significant differences were found between wards on any of the variables studied, due to a low incidence of improper drug usage. However, evidence was found that physicians who ordinarily are knowledgeable and careful in their psychopharmacologic practice may demonstrate significant deviation under duress. It was also found that the sophistication of the physician, not a monitoring system, was the most important single factor in determining the quality of psychopharmacologic practice. It is concluded that computerized monitoring may provide a safeguard against disturbances in ward milieu, as well as tangible proof of quality assurance efforts. 8 references.

003567 Molcan, J.; Rakus, A.; Zucha, I. Mickiewiczowa 13, 800 00 Bratislava, Czechoslovakia **/Some methodological ways of monitoring the effects of psychotherapeutic drugs./** K niektorym metodickym moznostiam sledovania ucinku psychofarmak. Ceskoslovenska Psychiatrie. 75(5):324-330, 1979.

A method of studying the effects of psychotherapeutic drugs was applied experimentally to 20 patients of a psychiatric clinic. In addition to their usual medication, the subjects received a pill containing the drug evaluate the effect of the drug by answering 20 items of a list of effects on a three point scale. Three parameters of the effects were defined: quality, consistency, and homogeneity. Each parameter is a measure of a different type of information about the drug's effect. It is concluded that the model experiment illustrates a method of determining the variety, homogeneity, and consistency of the effect of a drug. 3 references. (Author abstract modified)

003568 Muller-Oerlinghausen, B.; Renfordt, E. Dept. of Psychiatry, Eschenallee 3, Free University of Berlin, D-1000 Berlin 19, West Germany **Time-blind analysis and other video-strategies in phase II trials of psychotropic drugs.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(3):99-103, 1980.

The use of videotape techniques for psychiatric assessments in psychopharmacological trials is described. Videotapes of normal or specially structured interviews can be evaluated by more than one investigator and on a time blind basis, resulting in a more standardized average rater judgment. Analyses of videotapes of patients treated with mianserine, amitriptyline, or viloxamine are presented. 22 references. (Author abstract modified)

003569 Nyberg, G.; Axelsson, R.; Martensson, Erik. Martensson: Psychiatric Dept. III, Lillhagen's Hospital, S-42203 Hisings Backa 3, Sweden **Cerebrospinal fluid concentrations of thioridazine and its main metabolites in psychiatric patients.** European Journal of Clinical Pharmacology. 19(2):139-148, 1981.

A new gas chromatographic method for the determination of thioridazine and its metabolites in very low concentrations in cerebrospinal fluid (CSF) is described and illustrated by a study of CSF levels of thioridazine and its main metabolites in psychiatric patients. In the 48 psychiatric patients (who had received 40 to 1000mg/day of thioridazine), the total CSF concentrations of thioridazine and thioridazine side chain sulfone were significantly higher than their free serum concentrations whereas the total CSF concentration of thioridazine ring sulfoxide was significantly lower than its unbound serum concentration, and the total CSF concentration of the thioridazine side chain sulfoxide

did not differ from its free serum concentration. The concentrations of thioridaxine in serum and CSF varied significantly with age of patients, but no other correlation with age could be demonstrated in drug related parameters. The sex of the patients appeared to influence the side chain oxidation products, as the total CSF concentrations of the thioridazine side chain sulfoxide and side chain sulfone, as well as the free fraction in CSF of thioridazine side chain sulfoxide, were significantly higher in women. 5 references. (Author abstract modified)

003570 Ramsey, T. A.; Strand, S.; Stern, S.; Mendels, J. Dept. of Psychiatry, V.A. Hospital, Philadelphia, PA **MMPI prediction of imipramine response: a replication study.** Neuropsychobiology. 7(2):94-98, 1981.

The predictive validity for imipramine response of the MMPI was investigated. Eighteen hospitalized male depressives were treated with imipramine hydrochloride for 28 days. Prior to initiating treatment, each patient completed the MMPI. At the end of the treatment period, the patients were divided into groups of responders and nonresponders based on the change in Hamilton Depression Rating Scale scores. The Imipramine Response Scale - Male (IRS-M), a scale consisting of MMPI items, was scored for each patient and the ability of the scale to predict response or nonresponse in this sample was examined. Contrary to previous studies of the IRS-M, IRS-M scores did not predict imipramine response with better than chance accuracy. 7 references. (Author abstract modified)

003571 Viala, Alain; Durand, Alain; Grimaldi, Frederique; Cano, Jean-Paul. Laboratoire de Toxicologie generale et Biotoxicologie, 27, boulevard Jean-Moulin, F-13385 Marseille Cedex 05, France **/Therapeutic interest of blood levels determination for antidepressants: methodological approach./** Interest therapeutique de la determination des taux sanguins des antidepresseurs: approche methodologique. Psychologie Medicale. 12(11):2465-2470, 1980.

The possible prediction of the steady-state plasma levels of antidepressant drugs is examined. Through the influence of associated drugs or other compounds, a selective and sensitive method is developed for their determination. The method involves a selective extraction from whole blood or plasma, the use of an internal standard, and gas chromatographic analysis with a nitrogen selective detector. This method has general applications and may be used for pharmacokinetic investigations, for therapeutic control, and for analytical toxicology. 36 references. (Journal abstract modified)

003572 Wei, E. T. School of Public Health, Earl Warren Hall, University of California, Berkeley, CA 94720 **Enkephalin analogs and physical dependence.** Journal of Pharmacology and Experimental Therapeutics. 216(1):12-18, 1981.

A novel method of drug delivery, the osmotic minipump, was used to measure the ability of morphine and eight enkephalin analogs to produce physical dependence. After 3 days of morphine or peptide infusions into the rat brain, the dependent state was established and revealed by naloxone challenge; escape behavior, shaking, tachycardia, and an increased respiration rate provided objective evidence of withdrawal. The minipump method required only small amounts of test materials; 6mcg of morphine sulfate or 0.7mcg of FK 33,823, the most potent enkephalin analog, infused for 3 days per rat, were sufficient to induce dependence in all animals tested at these dose levels. A positive rank correlation was obtained between the short-term activities of the eight enkephalin analogs in inhibiting a motor response to a noxious stimulus and the long-term activities of the enkephalin analogs in producing physical dependence. 53 references. (Author abstract)

17 MISCELLANEOUS

003573 Achte, Kalle. no address **/Some observations on the psychological dimensions of placebo effects./** Einige Bemerkungen zu den psychologischen Dimensionen des Placebo-Effekts. Psychiatria Fennica 1979. 15-18, 1979.

The literature on placebo therapy and placebo effects in medicine and psychotherapy is reviewed. The primary and secondary effects of placebos used in psychopharmacological studies are discussed, with emphasis on the suggestive effects of placebos in behavioral change. The dynamics of placebo therapy are described, and the place of placebos in medical and psychiatric practice is defined. The occurrence of toxic reactions to placebo therapy also is examined. 18 references.

003574 Albou, Paul. Laboratoire de Psychologie economique, Universite Rene-Descartes, Paris V, France **/Self-medication./** L'automedication. Bulletin de Psychologie. 32(342):921-935, 1979.

Self-medication, its economic ramifications, and its psychosocial dimensions are discussed. Self-medication assumes a real or imagined pathological situation and entails the use of medicine without the intervention of a doctor. Although it is a universal phenomenon, self-medication is studied rarely. The economic ramifications of self-medication can be estimated by reviewing sales statistics of nonprescription drugs and of other home remedies. Self-medication can be motivated by the inaccessibility of the doctor, cost factors, or a dislike of the doctor-patient relationship, in which the patient assumes an inferior position. It is concluded that self-medication is in the public interest in cases of minor illnesses, because health services and doctors would tend to be available for more serious cases. It is suggested that general health education be improved so that the layman can distinguish more easily between major and minor illnesses. 28 references.

003575 Angelergues, Rene. Centre Philippe-Paumelle, 11, rue Albert-Bayet, F-75013 Paris, France **/The necessity of psychopharmacology in the development of psychiatry./** Necessite d'une psychopharmacologie pour l'evolution de la psychiatrie. Evolution Psychiatrique. 45(4):825-833, 1980.

The role of psychopharmacology in psychiatry's development is discussed. The use of chemotherapy in psychiatry has opened up new dimensions for the latter; however, clinical psychopharmacology has not been developed to the extent that experimental psychopharmacology has been developed on animals. It is thought that psychopharmacology as practiced daily in human chemotherapy should be subjected to a rigorous psychopathological analysis and that this will lead to a deemphasis of the present dichotomy between chemotherapies and psychotherapies. (Journal abstract modified)

003576 Barash, Harry Melvin. Saint Louis University **Drug and dietetic therapies for hyperkinetic children. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):3002-A, 1981. Ann Arbor, Univ. Microfilms No. 8100476, 101p., 1980.

Research trends from 1968 to 1979 concerning therapies for hyperkinetic children were reviewed. It is noted that trends from 1968 to 1973 revealed that studies began to yield more of needed controlled, quantitative data on which to base rational decisions regarding drug therapy for children with behavioral and learning disorders. The beneficial and harmful effects of medication were being documented. Trends from 1974 to 1979 documented the origination and follow through research of the thesis that hyperactivity is caused by artifical flavors and colors in food. Projective future trends emphasize the alternatives to drug and dietetic therapies. (Journal abstract modified)

003577 Battig, K. Institut fur Verhaltenswissenschaft, Eidg. Technische Hochschule, Turnerstrasse 1, CH-8092 Zurich, Switzerland **The smoking habit and psychopharmacological effects of nicotine.** Activitas Nervosa Superior. 22(4):274-288, 1980.

Psychopharmacological research into the effects of nicotine in typical smoker doses is reviewed in relation to the great difficulty in quitting smoking reported by habitual smokers. In addition to its positive psychopharmacological effects, nicotine appears to have no adverse psychological effects on the consumer, and the habit is supported by considerable sociocultural and biological dispositional factors. The absence of a general hypothesis of the manifold modes of action of nicotine is noted, and the role of dependence in the adverse effect experienced during short-term abstinence is discussed. The importance of nonnicotinic factors in maintaining smoking behavior is briefly noted. 76 references. (Author abstract modified)

003578 Bille, J. Service des Maladies du systeme Nerveux, Hopital Saint-Joseph, 26, boulevard de Louvain, F-13285 Marseille Cedex 2, France **/Treatment of depressive conditions in the elderly./** La therapeutique des etats depressifs du sujet age. Revue de Geriatrie. 5(3):121-122, 1980.

Treatment for depression in elderly subjects is examined. The various therapeutic means used to treat this disorder include: antidepressant drugs, anxiolytic drugs, electroshock therapy, and psychotherapy. Certain aspects in the treatment of the elderly which a physician must be aware of are: the need to maintain an effective dose until improvement is demonstrated, the need to prescribe progressive doses adapted to the somatic context, and the need to discontinue treatment gradually. Even though relatively small doses of medication are often effective, there are cases of heavy melancholic conditions when higher doses or electroshock therapy are needed. (Journal abstract modified)

003579 Braestrup, Claus; Nielsen, Mogens. Sct. Hans Hospital, DK-4000 Roskilde, Denmark **Multiple benzodiazepine receptors.** Trends in NeuroSciences. 3(12):301-303, 1980.

Research studies suggesting that more than one type of benzodiazepine (BZ) receptor exists are reviewed. Results incompatible with the presence of a single class of noninteracting BZ receptors were obtained first by Squires in 1979. He found that a new class of agents, the triazolopyridazines, inhibited 3H-diazepam binding with shallow dose response curves, yielding Hill coefficients below unity. Also incompatible with the presence of a single class of BZ receptors with noninteracting sites was the finding of mixed type competitive inhibition of 3H-diazepam and 3H-FNM binding by ethyl beta-carboline-3-carboxylate, which has a very high affinity for BZ receptors. Other topics discussed include: negative cooperativity; the physiology of BZ1 and BZ2 receptors; and direct evidence for multiple receptors. 11 references.

003580 Burian, W.; Jedlicka, S. Anton-Proksch Institut, Wien, Austria **/Dependence on tranquilizers (an overview with case studies)./** Abhangigkeit von Tranquilizern (Eine Ubersicht mit Fallbeispielen). Wiener Zeitschrift fur Suchtforschung. 2:13-17, 1979.

Several cases of dependence on tranquilizers and the associated tranquilizer withdrawal syndromes are discussed. The pertinent literature on addiction to tranquilizers is reviewed. The

risks of prolonged use of tranquilizers are summarized, with emphasis on establishment of tolerance and suicide attempts. The use of tranquilizers is seen primarily as a substitute for dependence on barbiturates. (Journal abstract modified)

003581 Chang, Kwen-Jen; Hazum, Eli; Cuatrecasas, Pedro. Dept. of Molecular Biology, Wellcome Research Laboratories, Research Triangle Park, NC 27709 **Multiple opiate receptors.** Trends in NeuroSciences. 3(7):160-162, 1980.

The research literature concerning the issue of whether the complex effects of opioid peptides are mediated by single or multiple types of opiate receptors is reviewed. It is noted that substantial pharmacological and biochemical evidence has been accumulated to support the existence of multiple opiate receptors. At least two types of opiate receptors can be classified and studied in detail using biochemical and pharmacological tools. Although it is generally agreed that morphine (mu) receptors mediate the analgesia of opioids, clarification of the physiological function of the enkephalin (delta) receptors in the CNS, the relationship between these two receptor sites, and their relation to other pharmacological effects is still needed. A more selective agonist or antagonist for morphine and enkephalin receptors may help to resolve these problems. 18 references. (Author abstract modified)

003582 Cohen, Marcia; Amdur, Mark A. no address **Medication groups for psychiatric patients.** American Journal of Nursing. 81(2):343-345, 1981.

The way in which medication groups for psychiatric patients operate and provide assistance to outpatients is addressed. The groups are designed to help clients understand the role that psychotropic medications play in maintaining mental health. A problem-solving, task oriented approach helps clients gain insight into their own feelings about taking medication. The groups meet weekly for an hour for 4 to 6 weeks and are led by the staff psychiatrist and the agency nurse. It has been observed that clients tend to perceive their medications in terms of side-effects rather than therapeutic effects. The leaders provide technical information to demystify the process of medication management. Successful involvement of hard to reach patients is also addressed.

003583 Cole, Jonathan O. no address **Psychopharmacology update.** Lexington, MA, Collamore, 1980. 195 p. $18.95.

Important developments in psychopharmacology of the past 5 years are reviewed and counterbalanced by personal experience. A practical review of lithium therapy indicates its firmly established use for acute mania and for the prevention of recurrent episodes of both mania and depression. Drug treatment of anxiety is examined, and it is stated that the combination of drugs and psychotherapy benefits anxious patients. Attention is given also to beta-blocking agents and to senile dementia. Research is presented on fenfluramine therapy in bipolar manic-depressives who do not respond to lithium and on phenothiazine therapy as a cause of tardive dyskinesia.

003584 Cottraux, Jean. Laboratoire de Psychologie Medicale, Hopital Neurologique, 59, boulevard Pinel, F-69394 Lyon Cedex 3, France **/Psychopharmacology and behavioral therapy./** Psychopharmacologie et therapie comportementale. Psychologie Medicale. 12(11):2357-2360, 1980.

The value of combining behavior therapy and psychopharmacology is discussed. Behavior therapy focuses on developing self-control strategies for patients' maladjusted responses; such therapy is associated with psychopharmacology in complex cases. Research shows the effectiveness of combining behavior therapy and the administration of antidepressant drugs in depressed obsessive-compulsive patients, and possibly in agoraphobics; schizophrenic patients could benefit from an association of behavior therapy and neuroleptic drug treatment. Cognitive therapy yields better outcomes than do antidepressant drugs in reactive depression. Biofeedback reduces or stops medication intake in some cases of stress related disorders. The importance of single case designs as alternatives to group designs is emphasized. 8 references. (Journal abstract modified)

003585 Creese, Ian; Sibley, David R. Dept. of Neurosciences, University of California, San Diego, School of Medicine, La Jolla, CA 92093 **Receptor adaptations to centrally acting drugs.** Annual Review of Pharmacology and Toxicology. 21:357-391, 1981.

Studies of CNS drug receptors identified by radioligand binding techniques and the influences of chronic drug treatments upon their number and affinity are reviewed. Cautions in interpreting this research literature are discussed, and studies of alpha-adrenergic, beta-adrenerigc, dopamine, serotonin, muscarinic acetylcholine, GABA, benzodiazepine, an opiate/endorphin receptors are described. It is noted that the molecular mechanisms responsible for the varied receptor changes reported in the literature have yet to be elucidated. It is suggested that the biochemical mechanisms responsible for receptor regulation in the CNS are not unlike those in the periphery. 235 references.

003586 Dorsey, Richard. Otto C. Epp Memorial Hospital, Cincinnati, OH **/Guidelines employed by the Food and Drug Administration in drug scheduling./** Discussion of presentation by Dr. Kartzinel. Psychopharmacology Bulletin. 17(1):42, 1981.

Implications of the criteria used by the U.S. Food and Drug Administration (FDA) in their scheduling of drugs under the Comprehensive Drug Abuse Prevention and Control Act of 1970, are discussed. It is contended that the FDA reached the correct conclusion in deciding that suicidal use per se is not sufficient to establish high abuse potential. However, FDA's proposed action on the amphetamines represents an unsound decision and extremely dubious principles. The FDA's deletion of an indication for a drug which is in fact safe and effective when used as labeled is of doubtful legality. It is urged that the American College of Neuropsychopharmacology oppose FDA's efforts to establish itself as an arbitor of medical practice through the use of labeling and production quotas. (Author abstract modified)

003587 Evans, R. H.; Watkins, J. C. Dept. of Pharmacology, Medical School, University of Bristol, Bristol BS8 1TD, England **Pharmacological antagonists of excitant amino acid action.** Life Sciences. 28(12):1303-1308, 1981.

Research studies of pharmacological antagonists of excitant amino acid action are reviewed. Pharmacological receptors for excitant amino acids have been classified into three major types found within the vertebrate CNS. The three types of receptor are exemplified by the action of the selective agonists N-methyl-D-aspartate (NMDA), kainate, and quisqualate. Several compounds have been discovered which are selective antagonists of NMDA evoked excitations, the most potent to date being 2-amino-5-phosphonovalerate (APV). Depression of synaptic excitation by NMDA receptor antagonists indicates a physiological role of these receptors in various regions of the CNS. Potent and selective antagonists for kainate or quisqualate receptors have yet to be developed. However, glutamate diethyl ester (GDEE) and gamma-D-glutamylglycine (DGG), applied microelectrophoretically, selectively depress quisqualate and kainate evoked responses, respectively. Cis-2,3-piperidine dicarboxylate (PDA) and 2-amino-4-phosphonobutyrate (APB) are relatively nonselective antagonists of the three types of excitant

receptor. Depression of APV resistant spinal transmissin by PDA and synaptically localized kainate binding in the hippocampus suggest that kainate and/or quisqualate receptors are also involved in excitatory transmission. 67 references. (Author abstract modified)

003588 Ferreri, M. Dept. de Psychiatrie et de Psychologie medicale, Hopital Saint-Antoine, 184, rue du Faubourg-Saint-Antoine, F-75012 Paris, France **/Modern aspects of psychopharmacology./** Les donnees modernes de la psychopharmacologie. Evolution Psychiatrique. 45(4):723-749, 1980.

Cerebral neurotransmission and modern psychopharmacology are examined. To date, seven neurotransmitters located at the synapse have been identified, and two types of receptors have been determined. Synaptic transmissions differ according to whether they are aminergic, noradrenergic, etc. Several mechanisms of neurotransmission across a synapse are illustrated. The neuronal system is a major element determining cerebral functioning. Modern psychopharmacology has hypothesized that psychic troubles are based on monoaminic dysfunctions and that schizophrenia results from dopaminergic overactivity. However, the interrelations between all these cerebral functions still remain an enigma. 11 references.

003589 Fidell, Linda S. California State University, Northridge, CA 91330 **Sex differences in psychotropic drug use.** Professional Psychology. 12(1):156-162, 1981.

The relationship between sex differences and the extent, origin, and persistence of psychotropic drug use, particularly the minor and major tranquilizers and stimulants, is explored. Prescription use of psychotropic drugs is extensive, involving millions of persons, mostly women, each year. Consequences of misuse/abuse of psychotropics include: failure to solve underlying problems, psychological dependence, and suicide. Origins of use include greater stress among women, tendency by women to report more numerous mental health symptoms, physician attitudes toward women, and the interaction between symptom presentation and physican expectations. Drug use persists because of low self-esteem, growing acceptance of chemical intervention, failure to recognize some prescription use as abuse, and the dependence component of sex-role stereotypes. Responsibilities of professional psychiatrists are discussed. 17 references. (Author abstract modified)

003590 Fisher, Seymour; Mansbridge, Bruce. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical Branch at Galveston, Galveston, TX **Public judgments on the importance of valium information.** Psychopharmacology Bulletin. 17(1):134, 1981.

Public judgments on the importance of various aspects of information concerning valium were solicited and compared with similar judgments by health professionals. Using a modified Q-sort technique, 86 adult general hospital outpatients selected facts they considered most important for patients to know about valium from a larger group of valium facts. Comparison of these patients judged important facts with information provided in a patient package insert for valium constructed by health professional indicated a generally high degree of concordance between public and expert judgments. The patients were particularly concerned with contraindications, cautions, and complications of the medication.

003591 Forino, Vittorio. Istituto Psichiatrico Italy **/Drug dependence: reflections on and analysis of an experience in the province of Riggio Emilia./** Tossicodipendenze: riflessioni e sintesi di una esperienza nella provincia di Reggio Emilia. Rivista Sperimentale di Freniatria. 103(6):1847-1862, 1979.

The effects of new legislation on drug addiction in the province of Reggio Emilia are examined. The new law regulates the use and sale of narcotics and psychotropic substances. Although new legislation is much stricter than was previously true, use is still quite high due to the prescription of barbiturates and antianxiety and antidepressant drugs. Psychoanalysis provides etiologic parameters for addiction among children, adolescents, and adults (personality factors and psychopathologies). Various models of intervention and rehabilitation programs for drug addicts are described. Medical treatment includes the use of agonists, partial antagonists, and antagonists.

003592 Gallagher, Rollin M., III; Chapman, Robert J. Dept. of Psychiatry, University of Vermont, Burlington, VT 05405 **The medication seminar and primary care education.** General Hospital Psychiatry. 3(1):16-23, 1981.

A continuing education seminar on psychotropic medication for primary care physicians and psychiatric trainees in primary care is described. The 12 session course was given at Dartmouth-Hitchcock Medical Center in Hanover, New Hampshire, over a 6 month period. The seminar was designed to emphasize experiental and two way learning. The course objectives included: 1) increasing knowledge about the use of psychotropic medication; 2) decreasing feelings of fear and inadequacy in dealing with psychiatric patients; 3) familiarizing local practitioners with mental health resources; and 4) bridging the traditional gulf between psychiatry and the general physician. An evaluation of the seminar indicated its effectiveness. It is concluded that the impact on the instructors and participants has implications for the design and development of future educational programs in both psychiatry and primary care. 14 references.

003593 Gillis, John S.; Moran, Thomas J. Oregon State University, Corvallis, OR 97331 **An analysis of drug decisions in a state psychiatric hospital.** Journal of Clinical Psychology. 37(1):32-42, 1981.

In an examination of psychoactive drug decision-making, 16 staff physicians at a state psychiatric hospital were asked to make decisions that concerned appropriate medication of 40 hypothetical cases of varying diagnoses. A profile presented for each case described the patient's status on eight symptom dimensions. The physician judges examined each profile and specified appropriate drugs and dose levels for the case. Agreement among judges and their prescriptive policies were studied, as was the manner in which symptoms were weighted in specific drug decisions. While agreement was above chance levels, it was generally very low. Differences in prescriptive choice were traceable to inconsistency in the use of symptom information and individual variations in prescriptive policies because cue (symptom) weighting strategies of judges were dissimilar and sometimes contradictory. 8 references. (Author abstract modified)

003594 Gorodetzky, Charles W. NIDAA Research Center, Lexington, KY **Use of currently available data sources to assess drug scheduling.** Psychopharmacology Bulletin. 17(1):38-40, 1981.

Current and potential sources of data for use in scheduling of available drugs by the Food and Drug Administration Drug Abuse Advisory Committee are reviewed. Recommendations of a subcommittee charged with determining the most rational approach to evaluate the effects of drug scheduling are presented. Major areas to consider in evaluation of effects of drug scheduling include: 1) number of fatal medical problems associated with the use of a drug; 2) number of acute, nonfatal medical problems associated with the use of a drug; 3) availability of drug on

the street; 4) legitimate medical use; and 5) diversion and illegal manufacture. (Author abstract modified)

003595 Grunbaum, Adolf. Dept. of Philosophy, University of Pittsburgh, Pittsburgh, PA 15260 **The placebo concept.** Behaviour Research and Therapy. 19(2):157-167, 1981.

The placebo concept is examined and analyzed in terms of A. K. Shapiro's influential definition of placebo. It is argued that throughout the medical, psychological, and psychiatric literature, the terminology used to characterize placebo is misleading, imprecise, and conducive to conceptual confusion in research on their effects. A precise new vocabulary is proposed to supplant the traditional language in which the results of placebo research are usually couched. Shapiro's construct of the generic placebo is based on objective rather than dependent or therapeutic beliefs. 23 references. (Author abstract modified)

003596 Guelfi, J. D. Clinique des Maladies Mentales et de l'Encephale, 100, rue de la Sante, F-75674 Paris Cedex, France / **Practical implications of modern psychopharmacological data./** Implications pratiques des donnees modernes de la psychopharmacologie. Evolution Psychiatrique. 45(4):805-823, 1980.

Recent knowledge in psychopharmacology is reviewed. Results of research on the pharmacokinetics of psychotropic drugs are somewhat ambiguous; however, the therapist, when prescribing them, is advised to use a rational approach. The importance of measuring plasma levels of antidepressants, of considering their combinability, and of understanding lithium sensitivity better is emphasized. Research into new antidepressant molecules has dealt mainly with biogenic amine precursors and with molecules having a specific action on serotonin, noradrenaline, dopamine, and certain hormonal substances. Plasma levels of neuroleptics and molecules having specific action are also being researched. Pharmacokinetic studies of benzodiazepines should lead to better indications for their use. The role of beta-blocking drugs in the pathology of anxiety with somatic manifestation is also mentioned. 94 references. (Journal abstract modified)

003597 Harrer, G. Institut fur forensische Psychiatrie, Universitat Salzburg, Ignaz-Harrer-Str. 79, A-5020 Salzburg, Austria / **The use of antidepressants in psychiatry./** Antidepressiva in der Praxis. Psycho. 6(8):388, 391-392, 394, 1980.

The different possibilities for the use of antidepressant drugs in endogenous and psychogenic depressions are discussed. Based on the assumption that in endogenous depression the sensitivity of postsynaptic receptors is reduced and that in psychogenic depression there is a depletion of biogenic amines on account of stress, antidepressants seem to be valuable in the treatment of these forms of depression. The supply of antidepressants has increased dramatically through the years. Choosing the right drug means knowing the exact state of psychopathologic symptoms. New possibilities of treating patients resistant to antidepressant therapy are also pointed out. 8 references. (Journal abstract modified)

003598 Heiman, Elliott M.; Wood, Gay. Dept. of Psychiatry, College of Medicine, University of Arizona, Tucson, AZ 85724 **Patient characteristics and clinician attitudes influencing the prescribing of benzodiazepines.** Journal of Clinical Psychiatry. 42(2):71-73, 1981.

A questionnaire, designed to evaluate the effect of patient characteristics and clinical attitudes on the prescribing of benzodiazepines was distributed to 86 members of the departments of psychiatry and family practice. The return rate was 87%. Of the respondents, 30% were consistently for, 20% were consistently against, and 50% were neither for nor against the use of benzodiazepines. Prescribing decisions apparently depended on a complex interaction of patient sex, employment, symptom severity, and chronicity, and the respondent's attitudes about the drugs. Plans are under way to revise the questionnaire, undertake in-depth interviews, and compare questionnaire data with actual prescribing practice. 10 references. (Author abstract)

003599 Hemminki, Elina. Psykofarmakaprojekti, Alkoholitutkimussaatio, Kalevankatu 12, SF-00100 Helsinki 10, Finland **Quality of reports of clinical trials submitted by the drug industry to the Finnish and Swedish control authorities.** European Journal of Clinical Pharmacology. 19(3):157-165, 1981.

The quality of trials used in support of applications to the Finnish and Swedish control authorities for licensing drugs was examined. All applications for psychotropic drugs received by Finnish and Swedish drug control authorities in the years 1965, 1970, 1974, and 1975 were studied. In addition, a random sample of applications for other drugs was selected in Finland. All reports of clinical trials on the therapeutic efficacy of the drugs were included. Many trials were uncontrolled, and in controlled trials, major drawbacks in the quality of the trial design and in the accuracy of reporting were often found. The number of patients in each controlled trial was small, and the majority of trials concerned selected groups of patients. Measures of effectiveness were often such that it was impossible to establish the overall benefit of the drug. Adverse effects were handled separately and were not adequately combined with efficacy data. 36 references. (Author abstract modified)

003600 Ho, I. K.; Harris, R. Adron. Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS 39216 **Mechanism of action of barbiturates.** Annual Review of Pharmacology and Toxicology. 21:83-111, 1981.

The neurochemical effects of acute and chronic barbiturate administration are reviewed, with emphasis on the relationship between neurochemical changes and the development of tolerance and dependence. In terms of the biochemical event, most investigations of barbiturate intoxication, tolerance, and dependence have been concerned with the role of neurotransmitters. The evidence at present is strongest for GABA involvement in the acute effects of barbiturates and for norepinephrine and GABA involvement in the development of tolerance. Because neurotransmitters, membrane lipids, macromolecules, and ions are intimately related in terms of synaptic transmission, it is concluded that these substances are crucial elements in the mechanisms of barbiturate tolerance and dependence. 203 references.

003601 Holt, John M. Pharmaceutical Division, Eli Lilly and Co., Indianapolis, IN **Impact of drug scheduling on utilization.** Psychopharmacology Bulletin. 17(1):43-44, 1981.

The impact of drug scheduling by the U.S. Food and Drug Administration under the requirements of the Comphrensive Drug Abuse Prevention and Control Act of 1970 on drug utilization and health care costs is described. A hypothetical example of the impact on a drug manufacturer of the rescheduling of one of its products is examined. It is contended that the adoption of controls is a costly exercise. If controls are accompanied by adverse publicity with a consequent shift in utilization to other manufacturers' pharmeceuticals, increasing expenditures will occur for product lines with decreased volume to offset costs. 6 references. (Author abstract modified)

003602 Hughes, Richard; Brewin, Robert. no address **The tranquilizing of America.** New York, Harcourt Brace Jovanovich, 1979. 325 p. $11.95.

The abuse of tranquilizers and other prescription drugs by persons who do not consider themselves drug abusers is exam-

ined as a major American health problem. It is suggested that doctors and drug companies may be held responsible. The overuse of such drugs as Valium by doctors who think they are giving their patients the relief they seek is documented. The use of drugs for hyperactivity and the tranquilizing of the aged are discussed. Over the counter drugs which satisfy the tranquilizing needs of the nation are considered. It is concluded that in America the strength of the individual is being swept aside in a heedless rush for the quick and easy chemical way out. (Journal abstract modified)

003603 Janowsky, Esther C.; Risch, Craig; Janowsky, David S. Janowsky, D.: University of California, San Diego, School of Medicine, M-003, La Jolla, CA 92093 **Effects of anesthesia on patients taking psychotropic drugs.** Journal of Clinical Psychopharmacology. 1(1):14-20, 1981.

The effects of anesthesia on patients taking antipsychotic drugs, tricyclic antidepressants, monoamine oxidase inhibitors, and lithium carbonate are reviewed. Since psychotropic drugs generally exert profound effects on central and periphral neurotransmitter and ionic mechanisms, prior intake of these drugs is an important consideration in the management of the patient about to undergo anesthesia and surgery. Topics reviewed include: effects of phenothiazine, thioxanthenes, and butyrophenones on narcotic analgesics; their interactions with CNS depressants such as sedative/hypnotics and barbiturates; sympathomimetic drug interactions; anticholinergic drug interactions; interactions with inhalation anesthetics; interactions with conduction anesthesia; and vasopressor, anticholinergic, and barbiturate/sedative hypnotic interactions with tricyclic antidepressants; monoamine oxidase inhibitor interactions with sympathetic amines; narcotic analgesics, sedative/hypnotic barbiturates, and muscle relaxants; and lithium carbonate interactions with muscle relaxants and barbiturates. 81 references. (Author abstract modified)

003604 Jeanneau, A. 19, La Roseraie, 108, avenue de Paris, F-78000 Versailles, France **/Psychiatric movements and psychopharmacology: between affect and representation./** Mouvements psychiatriques et psychopharmacologie: entre l'affect et la representation. Evolution Psychiatrique. 45(4):691-703, 1980.

Psychotropic drugs are discussed in light of Freudian metapsychology. A psychotropic drug causes an artificial weakening of instinctive affective forces. If impulses can be viewed as being composed of a representation and an affect, then the chemical has an impact on the level of the affect. It is proposed that this theoretical basis also applies to daily reality. The doctor-patient relationship during psychopharmacological treatment is discussed, and the bases of psychoanalytical therapy are reviewed. 20 references. (Journal abstract modified)

003605 Karlov, V. A. no address **/Questions of differentiated treatment for epileptic patients./** Voprosy differentsirovannogo lecheniya bol'nykh epilepsiyey. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(6):863-867, 1980.

A program of differentiated treatment was carried out on a group of 286 severely afflicted epileptic patients, 102 of whom subsequently achieved cessation or significant reduction of paroxysms. A number of current problems in epileptic therapy are discussed, including: the pharmacodynamics and pharmacokinetics of antiepileptic drugs and their proper dosages; the interval between dosages; the interaction of antiepileptic drugs with other types of drugs; combined medication; specification of the characteristics of petit mal seizures in order to facilitate individualization of treatment; the role of sleep in epileptic therapy; and the concomitance of epilepsy and hyposomnia. 20 references. (Journal abstract modified)

003606 Kartzinel, Ronald. Food and Drug Administration, Rockville, MD **Guidelines for scheduling drugs under the Controlled Substances Act.** Psychopharmacology Bulletin. 17(1):40-42, 1981.

Five of the most recent scheduling recommendations made by the U.S. Food and Drug Administration (FDA) under the Comprehensive Drug Abuse Prevention and Control Act of 1970 (concerning pentazocine, phencyclidine, marihuana, propoxyphene, and amphetamines) are reviewed. It is noted that under the Act, three criteria are examined (potential for abuse, accepted medical use, and dependence) in determining the place of a substance on the schedule. (Author abstract modified)

003607 Kessler, Kenneth A.; Waletzky, Jeremy P. 2020 K St., NW, Suite 810, Washington, DC 20006 **Clinical use of the antipsychotics.** American Journal of Psychiatry. 138(2):202-209, 1981.

Current practical information on the clinical management of acute episodes and maintenance therapy in schizophrenia, including dosage schedules, plasma level determinations, and side-effects (tardive dyskinesia and reversible extrapyramidal syndromes), is reviewed. All neuroleptics given in equivalent doses produce about the same degree of antipsychotic activity. The most common cause of treatment failure in acute psychosis is an inadequate dose, and the most common cause of relapse is patient noncompliance. It is concluded that maintenance medication should be given at the lowest dose that will sustain improvement. Several new alternative drug treatments are also discussed. 68 references. (Author abstract modified)

003608 Kline, Nathan S.; Angst, Jules. Dept. of Psychiatry, Columbia University, New York, NY 10027 **Psychiatric syndromes and drug treatment.** New York, Jason Aronson, 1979. 304 p.

A clear, systematic approach to decision-making regarding the administration of psychotropic drugs to individual patients, which is based on a classification by syndromes, is presented. The grouping of patients for the purpose of choice, dosage, and administration of medications is based on controlled studies and reported clinical experience. General principles of psychopharmacological treatment are presented, the syndromes and their psychopathology and pharmacological treatment are delineated, short summaries of the psychopharmaceuticals (action, dosage, indication, contraindication) are given, side-effects are discussed, and long-term management and prophylaxis are reviewed. 241 references.

003609 Lambert, P. A. Centre Hospitalier Specialise de Bassens, Clinique de Bressieux, F-73011 Chambery Cedex, France / **The history of psychotropic drugs./** Histoire des psychotropes. Evolution Psychiatrique. 45(4):669-689, 1980.

The history of psychotropic drugs is reviewed. Narcotic and hallucinogenic plants have been known and used by man since ancient times, but Lewin first described and classified these substances in 1927. The modern period of psychotropic drugs is said to date from 1952, when chlorpromazine was discovered and when it was learned that psychotropic drugs could be used in treating chronic mental disorders (by exciting, calming, or disturbing psychic functions). Neuroleptics are used to treat schizophrenia; tricyclics and monoamine oxidase inhibitors have antidepressant properties; and lithium and dipropylacetamide are mood stabilizers. Recent research has led to the production of additional drugs, and psychopharmacological research now occupies second place in the medical field, after research on cardiovascular illness. 46 references. (Journal abstract modified)

003610 Langer, S. Z.; Briley, M. Synthelabo L.E.R.S., 58, rue de la Glaciere, F-75013 Paris, France **High-affinity 3H-imipramine binding: a new biological tool for studies in depression.** Trends in NeuroSciences. 4(2):28-31, 1981.

The existing data on the high affinity tricyclic antidepressant binding site is reviewed, and the suggestion that 3H-imipramine binding is a useful tool in biological psychiatry is offered. Topics discussed include: high affinity 3H-imipramine binding sites in the brain; effects of various chronic treatments on 3H-imipramine binding; presence of high affinity 3H-imipramine binding sites in human platelets; and the possible significance and research potential of 3H-imipramine binding. It is concluded that the data obtained for 3H-imipramine binding studies are consistent with the indoleamine hypothesis of depression, which implicates changes in serotonin neurotransmission in the pathogenesis of depression. The utility of 3H-imipramine binding studies in the investigation of the biological basis of depression is noted. 16 references.

003611 Lewis, John William; Rance, Michael John. Reckitt and Colman, Pharmaceutical Division, Dansom Lane, Hull, England **Structure activity and receptor binding of antagonist analgesics.** Psychopharmacology Bulletin. 17(1):83-85, 1981.

The structure activity and receptor binding of antagonist analgesics are reviewed, and the relationship between analgesic effects and manifestations of physical dependence is discussed. Apart from the N-substituent, several other structural features have been identified as being of particular importance in conferring morphine antagonist character; most important is the presence of a phenolic hydroxyl group. In the whole range of opioids having mixed agonist/antagonist actions, it has been shown that there are qualitative differences which can only be explained by the existence of the multiple opioid receptors. It is noted that the receptor kinetics of buprenorphine and its mu partial agonist profile combine to produce a situation in which substantial, true, morphinomimetic activity is separated from the major manifestations of physical dependence to yield an effective long-lasting analgesic with a limited abuse potential. 13 references. (Author abstract modified)

003612 Linde, O. K. Pfalzklinik Landeck, D-6749 Klingenmunster, West Germany **/Neuroleptics: interactions with food -- chemical and pharmacodynamic studies on the interactions of coffee and tea./** Neuroleptika: interaktionen mit Nahrungsmitteln -- chemische und pharmakodynamische Untersuchungen zur Interaktion von Kaffe- und Teeinfusen. Psycho. 6(8):420, 1980.

A study by Kulhanek, Linde, Meisenberg, and Parish on the interaction of the effects of coffee and tea in psychiatric patients is discussed. In addition to the known effects of caffeine as an antiparkinsonian remedy, the interaction of tannic acid with caffeine produces alkaloids and therefore reduces caffeine absorption. This explains why large amounts of coffee and tea can be consumed by psychiatric patients without the expected stimulative effects.

003613 Lipton, S. no address **Relief of pain in clinical practice.** Oxford, England, Blackwell Scientific Publications, 1979. 373 p. L18.00.

A summary of the clinical experiences of a leading pain relief physician is presented. Topics discussed include: basic pain relief treatment; relevant anatomy and physiology of pain; pain in the head, neck and upper limb; the intervertebral disc; treatment of cancer pain; postherpetic neuralgia; pain relief via electric stimulation, acupuncture, and nerve blocks; and theories of pain.

003614 Maher, Jane. Meyerstein Institute of Radiotherapy and Oncology, Middlesex Hospital, London W1P 7PN, England **Intravenous lorazepam to prevent nausea and vomiting associated with cancer chemotherapy.** Lancet. No. 8211:91-92, 1981.

The efficacy of using intravenous lorazepam with cancer patients to prevent nausea and vomiting associated with chemotherapy is noted. Vomiting in some cases occurs like a conditioned reflex with each injection and may begin before chemotherapy is given and continue for several hours afterwards. Once such a pattern is established conventional antiemetics, even combined with phenothiazines, have little impact unless heavy sedation is given. Evidence is cited that indicates that injection of lorazepam before chemotherapy combined with standard, centrally acting antiemetics is a safe and useful way of improving toleration of chemotherapy. Seven patients were studied for at least three courses of multiple drug chemotherapy given 3 to 4 weeks apart. 5 references.

003615 Martin, I. L. Neurochemical Pharmacology Unit, Medical Research Council Centre, Medical School, Hills Road, Cambridge CB2 2QH, England **Endogenous ligands for benzodiazepine receptors.** Trends in NeuroSciences. 3(12):299-301, 1980.

Research attempts to identify a naturally occurring compound in the brain which normally interacts with the benzodiazepine receptor are reviewed. The benzodiazepines currently available to the clinician show a broad spectrum of activity; it has not been possible to differentiate the pharmacological profile of any member of the class from those of its cogeners. The classical 1,4-benzodiazepines appear to have the same affinity for the different subpopulations of the benzodiazepine receptors that are known to exist. The multiplicity of receptors may well imply that individual subpopulations mediate different pharmacological effects. The natural ligands for these receptors have yet to be identified, but hold much promise for the clinical pharmacologist in his attempts to develop novel compounds with a more restricted and useful spectrum of activity. 8 references.

003616 Morselli, Paolo L. L.E.R.S.-Synthelabo, 58, rue de la Glaciere, F-75621 Paris Cedex 13, France **/The use of pharmacokinetics in the followup of psychiatric patients./** Apport de la pharmacocinetique au suivi des malades psychiatriques. Evolution Psychiatrique. 45(4):751-759, 1980.

The use of pharmacokinetics in establishing a psychiatric therapy is discussed. It has been argued that pharmacokinetics has no practical application, but this is true only if a laboratory study alone is considered. However, if employed in a clinical setting, pharmacokinetics can have practical applications. Such a study would involve establishing a pharmacokinetic profile, verifying this profile in each patient, and determining the therapeutic and toxic thresholds as well as the possible interactions. It is recommended that biological monitoring of each patient, including monitoring of plasma levels, also should be undertaken. It is thought that such an approach can be quite useful in establishing a therapeutic schema. 26 references.

003617 no author. no address **Abstracts of the Annual General Conference of the European Brain and Behaviour Society, held at Louvain-la-Neuve, Belgium, on November 13-15th, 1980.** Behavioural Brain Research. 2(2):237-289, 1981.

Summaries of 48 papers read at the Annual General Conference of the European Brain and Behaviour Society, held at Louvain-la-Neuve, Belgium, in November, 1980 are presented. Topics discussed include: alpha-striation, a spatial periodicity appearing in stroboscopically illuminated moving random dot patterns; delayed matching to sample in rats; retinal input to the nucleus of the optic tract; neuronal consequences of imprinting; perceptual learning in a grating discrimination task; visual attention; perceptual hemisphere asymmetries; circadian changes in

photic responses; effects of morphine on learning; human proprioception under stroboscopic illumination; piracetam and learning; optokinetic nystagmus; eye/hand coordination in children; visuomotor behavior of callosum sectioned rats; scent marking and dominance in gerbils; effects of rearing conditions on neural development; vasopressin effects on learning; hormonal control of animal sexual behavior; chronic amphetamine and latent inhibition; and pattern discrimination in binocularly deprived cats.

003618 Norell, Staffan E. Depts. of Social Medicine and Ophthalamology, Karolinska Institutet, Huddinge University Hospital, Huddinge, Sweden **Accuracy of patient interviews and estimates by clinical staff in determining medication compliance.** Social Science & Medicine. 15E(1):57-61, 1981.

The accuracy of patient interviews and estimates by clinical staff in determining medication compliance among patients treated with pilocarpine to prevent visual loss from glaucoma was investigated. Objective and detailed information on self-medication behavior was obtained using a recording medication monitor. Results indicated that estimates by clinical staff were not useful in determining compliance. Patient interviews identified seven of 16 patients who missed doses at least once a week. However, underreporting of missed doses was a major problem in determining compliance by interview. Of 73 patients interviewed, only 4% reported two or more missed doses during the past 7 days, whereas monitor records showed that 33% of the Ss missed at least two doses, and that 16% missed at least six doses during the past week. 28 references. (Author abstract modified)

003619 Noyes, Russell, Jr. Dept. of Psychiatry, University of Iowa, 500 Newton Rd., Iowa City, IA 52242 **Treatment of cancer pain.** Psychosomatic Medicine. 43(1):57-70, 1981.

Treatment of cancer pain is discussed with emphasis on the psychological aspects of cancer pain and the place of certain psychological techniques and psychotropic drugs in a comprehensive treatment plan. Undertreatment of cancer pain often results both from the limited expectations of patients and from the inadequate knowledge of physicians. When indicated, analgesic drugs should be administered according to a regular schedule and in sufficient dose to prevent the emergence of pain. Psychological techniques including supportive psychotherapy, relaxation training, hypnosis, and the hospice milieu may contribute to a comprehensive approach to pain. Likewise, psychotropic drugs including phenothiazine and tricyclic antidepressants may be useful adjuncts when administered along with appropriate analgesic medication. Although most pain associated with advanced cancer may be relieved by currently available methods, research in this area is urgently needed. 71 references. (Author abstract modified)

003620 Palfreyman, Michael G.; Schechter, Paul J.; Buckett, William R.; Tell, Guy P.; Koch-Weser, Jan. Centre de Recherche Merrell International, 16, rue d'Ankara, F-67084 Strasbourg-Cedex, France **The pharmacology of GABA-transaminase inhibitors.** Biochemical Pharmacology. 30(8):817-824, 1981.

The pharmacology of GABA-transaminase (GABA-T) inhibitors is reviewed, and the clinical utility of these agents is evaluated. Topics discussed include: pharmacological effect of GABA-T inhibitors; sedation, hypothermia, and antinociceptive action; anticonvulsant effects; dyskinetic effects of intracerebral injections; antianxiety effects; effect on dopaminergic pathways; animal models of Huntington's disease; and clinical studies with GABA-T inhibitors. It is concluded that a well tolerated GABA-T inhibitor which produces the desired neurochemical change will be useful to explore the role of GABA in normal CNS function and in the pathogenesis of some disease states. 107 references.

003621 Park, B. K.; Breckenridge, A. M. Dept. of Pharmacology and Therapeutics, University of Liverpool, P.O. Box 147, Liverpool, L693BX, England **Clinical implications of enzyme induction and enzyme inhibition.** Clinical Pharmacokinetics. 6(1):1-24, 1981.

The research literature concerning modulation of the activity of drug metabolizing enzymes by enzyme induction and enzyme inhibition is reviewed, and the biochemical, clinical, and toxicological consequences of these phenomena are discussed. Drugs most frequently encountered as enzyme inducing agents in man are barbiturates, rifampicin, and phenytoin. Enhancement of drug metabolism by ethanol, tobacco smoking, and diet may also involve enzyme induction. Enzyme induction has been assessed in man by measuring changes in the pharmacokinetics of a marker drug, or changes in the disposition of endogenous compounds, such as gamma-glutamyltranspeptidase, D-glucaric acid, and 6beta-hydroxycortisol. The effect on the rate of elimination of a particular drug due to enzyme inhibition will depend upon the fraction of the dose that is normally metabolized by the inhibited enzyme and on the affinity of the enzyme for the drug and the inhibitor. 175 references. (Author abstract modified)

003622 Perucca, Emilio. Clinical Pharmacology Unit, Institute of Neurology, National Hospital, Queen Square, London WC1N 3BG, England **Drug interactions in epilepsy.** Arquivos de Neuro-Psiquiatria. 38(4):331-340, 1980.

The clinical consequence of interactions between antiepileptic drugs are discussed, with emphasis on the fact that the physician should consider carefully the need for and implications of adding a new compound to any therapeutic regime. The physician should be prepared for the possibility of an interaction whenever an unusual response in noted. Serum drug levels are seen as a valuable tool in recognizing and managing most types of interactions, but in no case can they be a substitute for careful observations and evaluation of the patient's symptoms and physical findings. 12 references. (Author abstract modified)

003623 Raskin, Neil H. Dept. of Neurology, University of California School of Medicine, San Francisco, CA 94143 **Pharmacology of migraine.** Annual Review of Pharmacology and Toxicology. 21:463-478, 1981.

The pharmacology of migraine is reviewed, and evidence supporting the hypothesis that migraine is a disorder of the CNS is evaluated. The role of the following drugs in altering the neurotransmitter function of serotonin is examined: extracranial vasoconstrictors (ergotamine, dihydroergotamine, and caffeine); the serotonin antagonists (methysergide and cyproheptadine), and beta-adrenergic blocker (propranolol); a tricyclic antidepressant (amitriptyline), a monoamine oxidase inhibitor (phenelzine); and a vasodilator (papaverine). The most persuasive of the several lines of evidence which suggest that migraine is a CNS disorder is the common mode of action of the antimigrainous drugs in the suppression of the firing rate of brainstem serotonergic neurons. It is suggested that the cardinal abnormality of migraine is that the modulation of serotonin release is defective, leading to sporadically low synaptic serotonin levels and secondarily increased raphe neuronal firing rates. 119 references.

003624 Reed, John P., Jr. Southern Baptist Theological Seminary, 2825 Lexington Rd., Louisville, KY 40206 **Mind/brain in the age of psychopharmacology: a crossroads for medicine and ministry.** Journal of Pastoral Care. 35(1):3-17, 1981.

The implications of the tacit scientific reductionism which underlies the psychopharmacological movement in psychiatry for the practice of psychiatry and the ministry are discussed. These advances in understanding brain chemistry point to an organic basis of mental disorder. The integration of brain chemistry with psychology is the principle task facing psychatry and ministry. This interpretive role is different from the diagnostic in that the minister continues to treat mental illness as charged with meaning and symbols and not mere signs of synaptic disruption. Although symptoms can be removed with medication, without the element of self-transcendence wherein the person beholds oneself in one's striving, willing, and purposing, freedom and individuality can be lost. The potential for personalization through the help of certain medications is present. Both physicians and ministers must avoid treating psychopharmacology as the cure all. The medical community stands to gain by the adoption of a broader model, one that treats persons in their totality.

003625 Rifkin, Arthur. Mount Sinai School of Medicine, New York, NY **Chronic drug treatment of the chronically ill: benefits and risks.** Journal of the National Association of Private Psychiatric Hospitals. 11(5):22-26, 1980.

The advantages and disadvantages of long-term drug treatment of schizophrenia and affective disorder are reviewed. The evidence of a number of studies has indicated that long-term use of antipsychotics such as chlorpromazine and fluphenazine prevents relapse or exacerbation in schizophrenics patients. One serious side effect of long-term antipsychotic use is tardive dyskinesia, for which no treatment has been established. Adverse reactions that may mimic psychopathological symptoms include akathisia and akinesia. Such side effects may cause or increase noncompliance, a major cause of drug unresponsiveness among chronic schizophrenics. As for the long-term treatment of affective illness, lithium has been proven to be effective for prophylaxis of bipolar illness and for treatment of bipolar depression, and tricyclic antidepressants are equally effective in the prophylaxis of unipolar depression. The risk of renal toxicity, and the consideration involved in deciding to institute prophylactic treatment for affective disorder are discussed. 12 references.

003626 Rosenbaum, Janet. University of Windsor, School of Nursing, Windsor, Ontario, Canada **Widows and widowers and their medication use: nursing implications.** Journal of Psychiatric Nursing and Mental Health Services. 19(1):17-19, 1981.

Use of psychotropic medication and alcohol and level of depression was examined in a descriptive study of widows and widowers (n=56) belonging to or not belonging to a self-help group. Results show: there was an increase in the use of tranquilizers, hypnotics, and antidepressants following bereavement, which, while decreasing somewhat over time, remained high relative to prebereavement levels; psychotropic medications were most often prescribed by physicians and Ss tended to continue to use them, some for years; medications were most often used to relax or to help with sleep; most Ss reported receiving no or unsatisfactory instructions regarding medications; only 4 of 26 Ss who knew the spouse was dying had open and free discussions about death, and none of those who had discussed death was taking medication following bereavement; Ss reported feeling closest to their children at the time of bereavement; level of depression and use of psychotropics were positively related; and no significant trends in alcohol use were found. Implications for nursing care of the dying patient and the spouse are discussed with reference to assisting them in working through the grieving process. 4 references.

003627 Rossie, George Vincent. Washington State University **Psychoactive medication use and abuse among an adult rural population. (Ph.D. dissertation).** Dissertation Abstracts International. 41(8):3238-B, 1981. Ann Arbor, Univ. Microfilms No. 8104146, 89p., 1980.

A sample of 390 residents of a rural county in eastern Washington completed a multiple wave mail survey assessing their use of psychoactive medications and drugs. Included in the 63 item questionnaire were questions measuring incidence and frequency of the use of over the counter drugs, prescription antianxiety agents, sedative/hypnotics, codeine cough preparations, opiate analgesics, stimulants, psychotropics, alcohol, and marihuana. Data are examined in terms of the pattern and prevalence of psychoactive drug use, the interrelations among stress and health factors and drug and alcohol use, the relationships between drug use and demographic factors and nonproblem behaviors, and the relationships between attitudes and drug use. Results show stress problems to be significantly correlated with the use of all psychoactive substances including alcohol while medical problems were significantly related to the use of all drugs except alcohol and stimulants. Results suggest that the patterns of drug prescriptions and drug use in this rural sample tend to deviate substantially from results obtained in national studies. (Journal abstract modified)

003628 Rouillon, F. Interne des Hopitaux de Paris, 100-102, rue de la Sante, F-75674 Paris Cedex 14, France /**Neuroleptic activity: a summary of Professor Jacques Glowinski's presentation.**/ Mecanismes d'action des neuroleptiques: compte rendu de la communication du Professeur Jacques Glowinski. Evolution Psychiatrique. 45(4):761-766, 1980.

The discovery of how neuroleptics act and the development of this knowledge to the present are discussed. The dopaminergic activity of neuroleptics was discovered during observation of the cataleptic properties of reserpine. This knowledge was amplified in three stages: Carlsson's discovery of increased dopaminergic activity due to the activation of dopaminergic neurons as a result of a blockage of postsynaptic receptors; Kebabian and Greengard's isolation of adenylcyclase and demonstration of its link to dopamine activated receptors; and Snyder's identification of receptors by fixing on them dopaminergic agonists or radioactive neuroleptics. Present research is concerned with the following areas: long-term neuroleptic treatment; histochemical postmortem studies; and animal research to understand the different dopaminergic systems.

003629 Royer, R. J. Service de Pharmacologie et Toxicologie, C.H.R., Nancy, France /**Interactions between alcohol and medications.**/ Interreactions entre alcool et medicaments. Revue de l'Alcoolisme. 25:21-28, 1979.

The various ways in which psychopharmaceuticals interact with alcohol are discussed. The mechanisms of absorpotion, distribution, and affinity to certain receptors, and drug metabolism are examined. The interaction of alcohol with neuroleptic drugs, tranquilizers, and tricyclic antidepressants is explained. A wide spectrum of often contradictory findings is offered. Contradictions stem from the impossibility of creating identical conditions for experiments. Independent variables such as age, sex, personality, and physical and mental state are the main reasons why it has been impossibile to determine the exact degree and mode of drug/alcohol interaction. (Journal abstract modified)

003630 Schou, Mogens. Psychopharmacology Research Unit, Aarhus University Institute of Psychiatry, Psychiatric Hospital, DK-8240 Risskov, Denmark **Bibliography on the biology and pharmacology of lithium.** Neuropsychobiology. 7(1):26-55, 1981.

A bibliography covering the period 1978 through 1980 and concerned with the biology and pharmacology of lithium is presented. Included are references to all aspects of the biology,

pharmacology, toxicology, and clinical use of lithium with psychiatric patients. Most of the papers listed contain original data; textbooks and congress abstracts are listed only occasionally.

003631 Scott, Clarissa Stewart. University of Miami **The influence of patient beliefs on compliance to therapy for diabetes mellitus. (Ph.D. dissertation).** Dissertation Abstracts International. 41(7):2739-B, 1981. Ann Arbor, Univ. Microfilms No. 8100745, 153p., 1980.

Compliance with an insulin regimen and related beliefs were studied in a sample of adult onset diabetic patients. The 46 Ss were from a low income clinic, and most were female and Black. A comparison of objective measures and self-reports showed that 17% of the sample were not truthful in regard to taking their insulin as directed. Insulin compliant patients were more likely to hold the belief that insulin use was effective in the control of diabetes. This was also true with regard to patients who were compliant with weight loss. It is concluded that noncompliant patients are more likely than compliant patients to believe they should use their own judgment in deciding how much of the doctor's advice to follow. (Journal abstract modified)

003632 Shopsin, Baron. New York University School of Medicine, New York, NY 10016 **Second generation antidepressants: a clinical pharmacotherapeutic research strategy.** Psychopharmacology Bulletin. 17(1):33-35, 1981.

A clinical pharmacotherapeutic research strategy for depressive disorders, consisting of the use of investigational drugs with defined pharmacological and biochemical activity, is described, and results of such studies are discussed. The specific actions of a variety of new and/or investigational antidepressant drugs including their dominant central action on norepinephrine (NE), serotonin (5-HT), or dopamine (DA) are described. It is concluded that efforts to define the specific amine or amines responsible for antidepressant effects of antidepressant drugs appear unrewarding, since any of the amines alone or in combination may be associated with an antidepressant effect of drugs in man. 5 references. (Author abstract modified)

003633 Simon, P.; Frances, H.; Thiebot, M. H.; Puech, A. Dept. de Pharmacologie, Faculte de Medecine Pitie-Salpetriere, 91, boulevard de l'Hopital, F-75634 Paris Cedex 13, France / **The validity of models in psychopharmacology./** Validite des modeles en psychopharmacologie. Evolution Psychiatrique. 45(4):777-784, 1980.

The use of models in experimental psychopharmacology and the difficulties they present are discussed. Psychopharmacological models are used to discover new medications and, indirectly, to try to understand the mechanisms underlying certain pathological human conditions. To accomplish the first goal, the models must be easy to perform, replicable, specific, and sensitive. The main problems encountered in using such methods are illustrated through four examples: antagonistic effects of reserpine; antagonistic effects of oxotremorine; four plates test; and the heated floor maze. (Journal abstract modified)

003634 Spiker, Duane G. University of Pittsburgh School of Medicine, Pittsburgh, PA **The pharmacological treatment of schizoaffective disorder-depressed: a review of the literature.** Psychopharmacology Bulletin. 17(1):75-78, 1981.

The clinical literature concerning the pharmacological treatment of schizoaffective disorder/depressed patients is reviewed. Studies employing tricyclic antidepressants alone, antipsychotic drugs alone, and antidepressants plus antipsychotics are evaluated. It is concluded that the literature dealing with the pharmacological treatment of schizoaffective disorder/depressed persons is sparse and inconclusive. It is recommended that a good narrative history be taken, with particular emphasis on the chronology of symptoms. Issues concerning diagnosis and nomenclature are noted. 12 references. (Author abstract modified)

003635 Spriet, Alain. Laboratoires Hoechst, Tour Nobel, F-92800 Puteaux, France **/Debate: therapeutic trials in a natural environment./** Debat: les essais therapeutiques dans un environnement naturaliste. Psychologie Medicale. 12(13):2735-2737, 1980.

The advantages and disadvantages of conducting drug trials in a natural environment are discussed. The term natural implies an environment as similar as possible to the everyday environment of the patient, rather than one that represents a hospital setting. It is thought that tests in natural settings will enable physicians to determine more precisely the indications for a particular medication. However, several variables must be considered when evaluating the usefulness of a drug tested in this setting: the doctor-patient relationship; personal events in the life of the patient; the pharmaceutical preparations themselves; and the verification of the treatment. A brief discussion follows the article.

003636 Squire, Larry R.; Davis, Hasker P. V. A. Medical Center, 3350 La Jolla Village Drive, V-116, San Diego, CA 92161 **The pharmacology of memory: a neurobiological perspective.** Annual Review of Pharmacology and Toxicology. 21:323-356, 1981.

Research studies concerning the effects of drugs on memory are summarized in relation to the neurobiology of memory. Six areas of investigation (acetylcholine, protein synthesis, ACTH, vasopressin, opioids, and catecholamines) are considered. In general, the data are consistent with a view of memory whereby information storage occurs as alterations in connectivity along neural pathways already specialized for different kinds of information processing. These intrinsic, information containing neural ensembles are not fully etablished at the moment of learning, but develop and change with time in a way that reflects their modulation by extrinsic systems. The data concerning the putative effects of various drugs on arousal, fear, and attention raise the possibility that modulation reflects specific and different influences on memory, rather than some single influence. 203 references.

003637 Starke, K. Pharmakologisches Institut, Universitat Freiburg, D-7800 Freiburg i. Br., West Germany **Presynaptic receptors.** Annual Review of Pharmacology and Toxicology. 21:7-30, 1981.

Studies concerning the terminology, development, location of receptors, mode of action, and physiological function of presynaptic receptors are reviewed. It is noted that presynaptic receptors, when activated, primarily modify the function of the axon terminals, for instance, transmitter biosynthesis and release. Whether physiologically silent or not, presynaptic receptors may be sites of action of drugs. Imidazoline alpha-adrenoceptor agonists may cause sedation by presynaptic (and soma dendritic) inhibition of central noradrenaline pathways. GABA antagonists may produce convulsions by interrupting GABAergic presynaptic inhibition. Opiates possibly relieve pain because they activate receptors on substance-P terminals. Methylxanthines may stimulate the CNS because they antagonize presynaptic inhibitory effects of adenosine. The diversity of presynaptic receptors as a mechanism for the physiological regulation of neurons is emphasized. 182 references. (Author abstract modified)

003638 Stolberg-Acosta, Robert; Martin-Del-Campo, Enrique. Dept. of Psychiatry, University of Puerto Rico, Medical Sciences Campus, G.P.O. Box 5067, San Juan, Puerto Rico 00936 **What is standard practice in prescribing psychotropics?** Legal Aspects of Medical Practice. 8(3):31-35, 1980.

Justifications for prescribing doses of psychotropic drugs that exceed the recommended dosage of the Physicians' Desk Reference (PDR) are discussed. A survey of antidepressant prescription in 13 community hospitals in greater Philadelphia indicates that in a high percentage of these institutions, the doses often exceeded the maximum recommended in the PDR. This was particularly true for three particular antidepressants, although recommended doses of amitriptyline and imipramine were never overexceeded. Dosage recommendations also were exceeded for the minor tranquilizers. Implications for standard practice are discussed. 23 references.

003639 Tipton, K. F. no address **Neurochemical and biochemical pharmacology.** International review of biochemistry, vol. 26. Lancaster, England, MTP Press, 1979. L15.25.

Six papers on diverse topics in neurochemistry and biochemical pharmacology are presented. Topics discussed include: an overview of cyclic nucleotides and synaptic transmission, including metabolism, factors affecting synthesis and steady-state concentrations in nervous tissue, and synaptic roles for cyclic AMP and cyclic GMP; the storage and secretion of catecholamines; the neurochemistry of the trace amines (meta-tyramine, para-tyramine, beta-phenylethylamine, and tryptamine) in the CNS; histamine function in immune responses, gastric secretion, the cardiovascular system, and the CNS; and the purification, characterization, quantification, localization, and turnover of skeletal muscle acetylcholine receptors.

003640 Tosteson, Daniel C. no address **Lithium and mania.** Scientific American. 244(4):164-166, 168, 171-172,174, 1981.

A review is presented of the relationships among lithium, its movement across membranes, and its use in the treatment of mania. Early research by Cade in the treatment of manic-depressive disorder with lithium salts is reviewed. The similarities among lithium, potassium, and sodium are discussed, as are their more important differences. The structure of cell membranes is delineated, and four types of transport across cell membranes are examined: selective movement of various ions down their respective concentration gradients and electrical potential gradients; pumps, which move ions against concentration and electric potential gradients; exchange diffusion; and cotransport. Research elucidating lithium metabolism in human red blood cells is then summarized, and the movement of lithium across membranes in the individual receiving lithium therapy is outlined in terms of leakage pathways and the lithium-sodium countertransport system. Directions for future research into the lithium ion's mechanism of action in mania and implications for medicine, in general, are discussed.

003641 Val'dman, A. V.; Zvartau, E. E. Institut farmakologii AMN SSSR, Moskva, USSR **/Action on the emotionally reinforced brain system as a means of treating alcoholism and drug addiction pathogenetically./** Vozdeystviye na emotsional'no-podkreplyayushchiye sistemy mozga kak sposob patogeneticheskoy terapii alkogolizma i toksikomaniy. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 80(7):1020-1024, 1980.

The effect of hypothalamic stimulation on emotional reactions to drugs (morphine, cocaine, amphetamines, diazepam and pentobarbital) and alcohol is discussed. Methods for the study and production of effective drugs for prevention and treatment of dependence were developed. Results show that the drugs activate centers of electrical self-stimulation in the brain, an effect which is regarded as basic to the action of the drugs in producing euphoria; and that antieuphoric action is an important consideration in treatment of psychological dependence on narcotic drugs. 16 references. (Journal abstract modified)

003642 Valli, M.; Pringuey, D. Service de Pharmacologie Clinique, C.H.U. de la Timone, F-13385 Marseille Cedex 5, France / **New trends concerning the biochemical mechanism of action of benzodiazepines./** Actualites concernant le mecanisme d'action biochimique des benzodiazepines. Therapie. 35(5):561-569, 1980.

Recent research on the biochemical mechanism of benzodiazepines (BZDs) is reviewed. BZDs are widely used in clinical practice as anxiolytics, muscle relaxants, sedatives, and anticonvulsants. Electrophysiological studies have shown a specific interaction of BZD with GABA, an inhibitory neurotransmitter. BZD enhances the physiological effects of GABA. The discovery of saturable and stereospecific binding sites with high affinity for BZD, and their brain distribution indicates a predominantly cortical action of BZD. Furthermore, BZD receptors seem to be linked to GABA receptors and closely connected to the chloride conductance mechanism associated with the GABA receptor. The discovery of BZD receptors suggests the existence of endogenous ligands. Inosine, hypoxanthine or nicotinamide are reported to have BZD like activities, in spite of a relative low affinity for their binding sites. Their putative role as endogenous anxiolytics needs to be supported by behavioral studies. 39 references. (Journal abstract modified)

003643 Vaynshtok, A. B.; Oleynik, L. I. Institut gerontologii, AMN SSSR, Kiev, USSR **/Geriatric aspects of parkinsonism (clinical picture, pathological mechanisms, and multiple treatment)./** Parkinsonizm v geriatricheskom plane (klinika, patologicheskiye mekhanizmy, kompleksnoye lecheniye). Vestnik Akademii Meditsinskikh Nauk SSSR. No. 12:33-40, 1980.

The clinical picture, pathological mechanisms, and multiple treatment of geriatric parkinsonism were studied in relation to data collected in the course of 12 years on 1,500 elderly patients with parkinsonism, and control groups of healthy people. The processes examined were: catecholamine, mineral, and lipid metabolism, adrenal cortical androgenic and glucocorticoid functions, autoimmune responses, bioelectric activity of muscles, monosynaptic Hoffmann's reflex, and visual evoked potentials. Results show that the age specific changes in the motor sphere during late ontogeny in healthy people have the same direction as in patients with parkinsonism. These changes are more pronounced in patients with parkinsonism. The results show that combined treatment, including the use of drugs affecting the main symptoms of the disease, along with antisclerotic agents and hypotensive drugs, is desirable. 32 references. (Journal abstract modified)

003644 Versiani, Marcio. Instituto Brasileiro de Psiquiatria, Av. Venceslau Bras, 71, 22290 Rio de Janeiro, Brazil **/Therapeutic (III): general characteristics of antipsychotic drugs./** Terapeutica (III): antipsicoticos -- principios gerais. Jornal Brasileiro de Psiquiatria. 29(2):87-90, 1980.

General principles of the use of antipsychotic drugs are discussed. Antipsychotics can be divided into three groups according to the different proportion of extrapyramidal, cardiovascular, and anticholinergic side-effects. The clinician should choose a few drugs representative of each group, and should become familiar with their qualities. Treatment should be initiated with small dosages, to be modified later in order to determine the best dosage for the patient. Drug combinations should be avoided. (Journal abstract modified)

003645 Villarreal, Julian E.; Castro, Antonio. Instituto Miles de Terapeutica Experimental, Mexico City, D.F. Mexico **A reformulation of the dual-action model of opioid dependence: opioid-specific neuronal kindling.** Psychopharmacology Bulletin. 17(1):56-58, 1981.

A reformulation is presented of the dual action model of opioid dependence, wherein opioid dependence is attributed to the setting up or sensitizing a kindling mechanism within opioid sensitive neurons. This model of opioid specific kindling can account for abstinence effects seen with antagonist administration during narcotic treatment, termination of chronic narcotic treatement, abstinence like effects produced in dependent monkeys by restraint or by administration of cholinesterase inhibitors, afterdischarges in isolated segments of dependent intestine following single electrical stimuli, abstinence like effects produced by antagonists given months after terminaton of narcotic treatment, and protracted abstinence. It is noted that the chronic activation of the opioid sensitive kindling mechanism results in a progressive buildup of sensitivity to certain triggering stimuli and to an increased capacity of the enkindled structure to discharge, causing overt abstinence like responses of a progressively larger magnitude. 5 references. (Author abstract modified)

003646 Vinar, O. K ovcinu 1519, 182 00 Praha 8, Czechoslovakia **/Psychopharmacology after 20 years of conferences in Jesenik./** Psychofarmakologie po 20 letech konferenci v Jeseniku. Ceskoslovenska Psychiatrie. 75(3):213-222, 1979.

The development of psychopharmacology in the past 20 years in Czechoslovakia is discussed. The report concentrates on the mutual relationship between basic research and clinical practice and on future prospects in the light of psychopharmacology and the pathogenesis of psychoses. Czechoslovakia has specific priorities in the epidemiology of drug use. Anxiolytics more than any other drugs may influence entire social groups. It is concluded that many clinical problems remain unsolved, but impressive improvements have been made in the area of new discoveries in psychopharmacology rather than in the area of therapeutic facilities. 28 references.

003647 Watkins, Gareth; Tarnopolsky, Alex; Jenkins, Linda M. Tarnopolsky. Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, England **Aircraft noise and mental health: II. Use of medicines and health care services.** Psychological Medicine. 11(1):155-168, 1981.

The relationship between aircraft noise from London (Heathrow) Airport, noise annoyance, and the following variables were studied: use of medications, attendance to general practitioners, referrals to outpatient clinics, admission to the hospital, and use of community health or welfare services. Respondents were urban dwellers 16 years old and older. None of the health indicators showed higher uptake in the high noise areas. In areas exposed to high noise the use of nonprescribed drugs was significantly higher among very annoyed than among less annoyed respondents. The use of psychotropic drugs and general practice and inpatient services tended to increase with increasing annoyance both in high noise and low noise areas, but the differences were not significant. Parallels to earlier research are considered. 13 references. (Author abstract modified)

003648 Watkins, J. C.; Evans, R. H. Dept. of Physiology, Medical School, University of Bristol, Bristol BS8 1TD, England **Excitatory amino acid transmitters.** Annual Review of Pharmacology and Toxicology. 21:165-204, 1981.

Research studies of amino acid mediated synaptic excitation utilizing three approaches (development of new agonists and antagonists for determining the pharmacological properties of different excitatory amino acid receptors; use of lesioning techniques to determine the effects of selective neuronal and/or afferent input loss upon regional levels, uptake, and release of suspected transmitters; and study of membrane binding sites for excitatory amino acides by the use of radioactive ligands) are reviewed. The findings of these three lines of research are compared, and gaps in the evidence for amino acid mediated synaptic excitation in specific neuronal pathways are emphasized. It is concluded that knowledge and understanding of this type of central synaptic excitation seems likely to enter a phase of rapid growth. 294 references.

003649 Way, E. Leong. Dept. of Pharmacology, School of Medicine, University of California, San Francisco, CA 94143 / **Recent reviews of biochemical, neurochemical, and pharmacological topics./** Review of reviews. Annual Review of Pharmacology and Toxicology. 21:605-613, 1981.

Recent reviews of selected topics in biochemistry, neurochemistry, and pharmacology are reviewed. Reviews of the following topics are discussed: neuropeptides in the brain; enkephalins and endorphins; tetrodotoxin and saxitoxin; substance-P; presynaptic receptors; radioimmunoassay techniques; male contraceptives; drug dependence; and general pharmacology. The tendency for original research to be presented in proceedings of symposia rather than refereed journals is briefly discussed. 13 references.

003650 Williams, Roger L.; Mamelok, Richard D. Drug Studies Unit, 926 Science, University of California, San Francisco, CA 94143 **Hepatic disease and drug pharmacokinetics.** Clinical Pharmacokinetics. 5(6):528-547, 1980.

Recent research concerning the influence of the liver on drug pharmacokinetics is reviewed, and implications for drug therapy in patients with hepatic disorders are discussed. Studies have confirmed that hepatic disease may alter substantially one or more pharmacokinetic parameters of drug absorption and disposition. Physiological models of hepatic drug elimination have emphasized the importance of physiological variables such as hepatic blood flow, protein binding and intrinsic clearance of the liver on hepatic drug elimination. Both clinical investigations and theoretical considerations have indicated that the influence of hepatic disease on the pharmacokinetics of a drug may be complex and may result in either unchanged, retarded, or even accelerated drug elimination. Changes in response to drugs in patients with hepatic impairment add to this complexity. Although general guidelines may be formulated now to assist clinicians in constructing dosage regimens of several important drug classes (notably the benzodiazepines and barbiturates) in hepatic disease, it is not now possible to predict in an individual the influence of a specific hepatic disease on the disposition of a drug. 88 references. (Author abstract modified)

003651 Wilson, Ronald W.; Elmassian, Bonnie J. Dept. of Natural Science, Michigan State University, East Lansing, MI 48823 **Endorphins.** American Journal of Nursing. 81(4):722-725, 1981.

The use of endorphins and a brief history of their discovery with both human and animal subjects are presented. Endorphins are endogenous compounds with opiate like properties that include the potential to alter pain perception, mood, respiration, and the release of pituitary hormones. Endorphins have been found in the pituitary gland, gastrointestinal tract, and throughout the central nervous system. Chemically, the endorphins are peptides, sequences of several linked amino acids. In addition to research documenting the physiological role of endorphins in the pain process, evidence is reported which implicates these peptides directly or indirectly in various psychoses, in behavioral processes, and in processes of learning. 25 references.

003652 Youdim, M. B. H.; Lovenberg, W.; Sharman, D. F.; Lagnado, J. R. no address **Essays in neurochemistry and neuropharmacology.** Chichester, England, John Wiley, 1980. 282 p. Vol. 4. L19.50.

A collection of papers in neurochemistry and neuropharmacology is presented. Topics discussed include: research concerning biochemical defects or abnormalities in schizophrenia; the molecular processes responsible for release by exocytosis of catecholamines from noradrenergic terminals and from the adrenal medulla; modulation of transmitter release by drugs; the chemistry, kinetics, and possible identity of dopamine-beta-hydroxylase with chromogranin-A; brain enolases; and changes in catecholamine receptor sensitivity.

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